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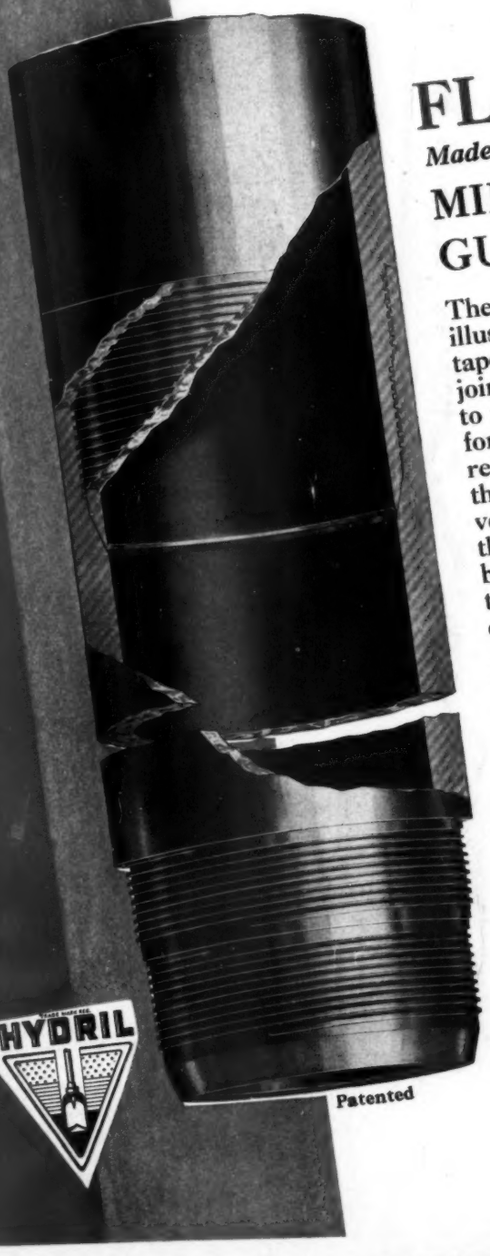

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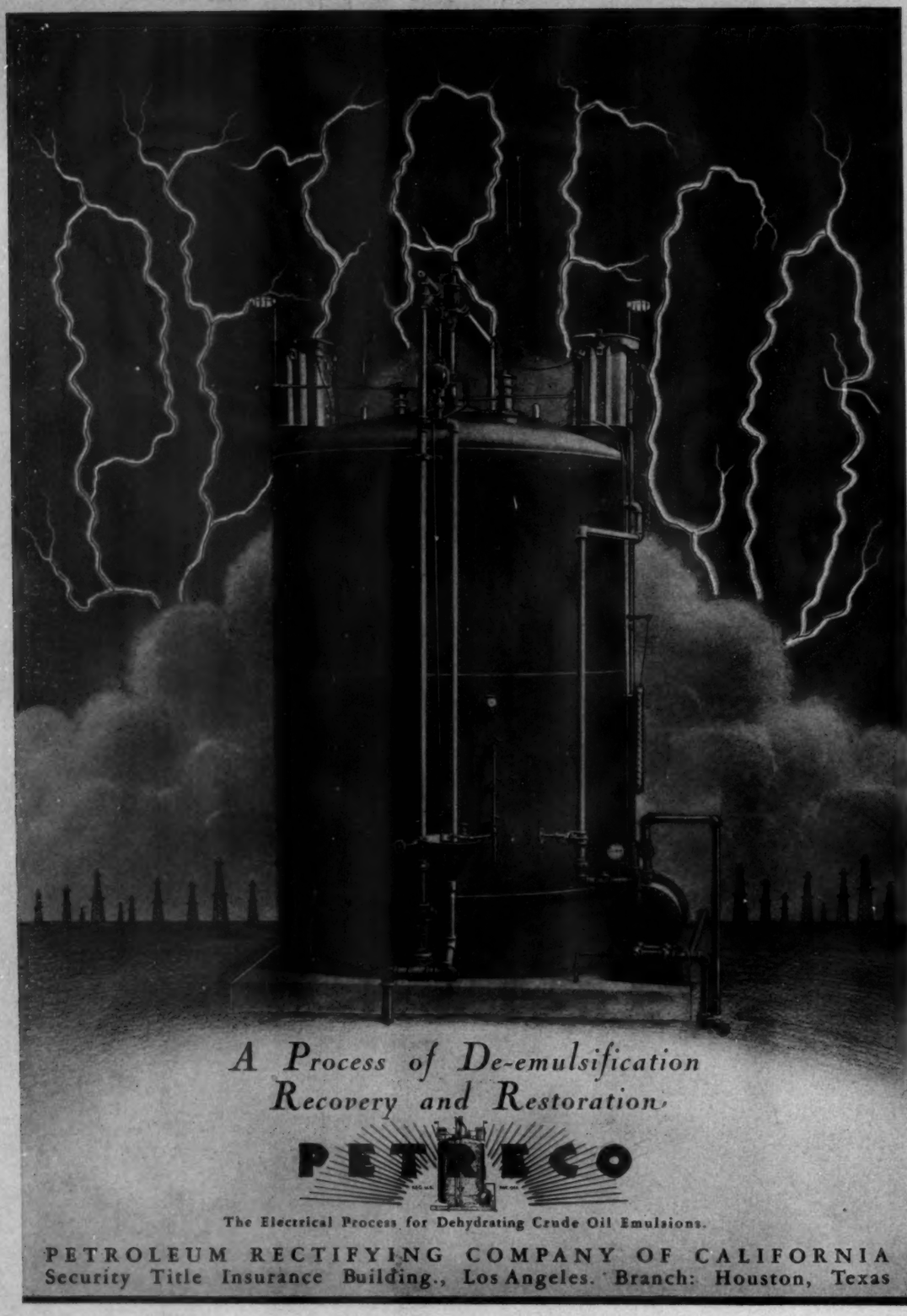

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More Effective Control of Production Probable as Result of Laws Enacted and Proposed

By ANDREW M. ROWLEY

ENACTMENT of a new proration law in Oklahoma which provides severe penalties for violations of its provisions has cleared up the production situation in that state to a very great extent. Determined efforts are being made in Texas to correct chaotic conditions which existed there prior to the shutting in of the East Texas fields. Taking of potentials in that section indicates the state authorities plan a new order which may follow more closely the opinions of the courts which have passed adversely on proration rules and regulations existing to this time.

On the whole the production situation has improved quite materially during the past week and a greater spirit of optimism regarding the future is evident. Introduction into Congress of a bill to prevent interstate transportation of hot oil, as advocated by the Committee of 15 at the recent conference in Washington, is reassuring to the industry which hopes, sincerely, quick action upon the part of Congress on this measure will help relieve the situation. Delay in passing this measure will simply tend to postpone ultimate recovery of the oil business as its one big trouble is and has been the production of crude oil in excess of allowables and the marketing of this hot oil at cut prices.

The shut down of the fields in East Texas was far more effective than most oil men had expected. One important contributing factor in the practically 100 per cent obedience to the Railroad Commission's order was the fact coastal terminals were so congested with railroad tank cars filled with oil, with storage facilities not available to many shippers that hot oil producers and marketers simply had to cease operations for the time being. Prices of this oil at coastal terminals are reported to have dropped to as low as five cents a barrel in East Texas.

It is to be regretted deeply that right at the time some progress was being made in the efforts to stabilize the industry, the Federal administration should see fit to advocate a measure urged by an almost infinitesimal representation of the industry to divorce interstate pipe lines from other branches of the industry. There has been a general uprising against the one-half of one per cent provision in the prohibition law and, from all indications, the real part of the petroleum industry will make itself heard against the one-fourth of one per cent representation which seems to have muddied the waters of improvement in conditions.

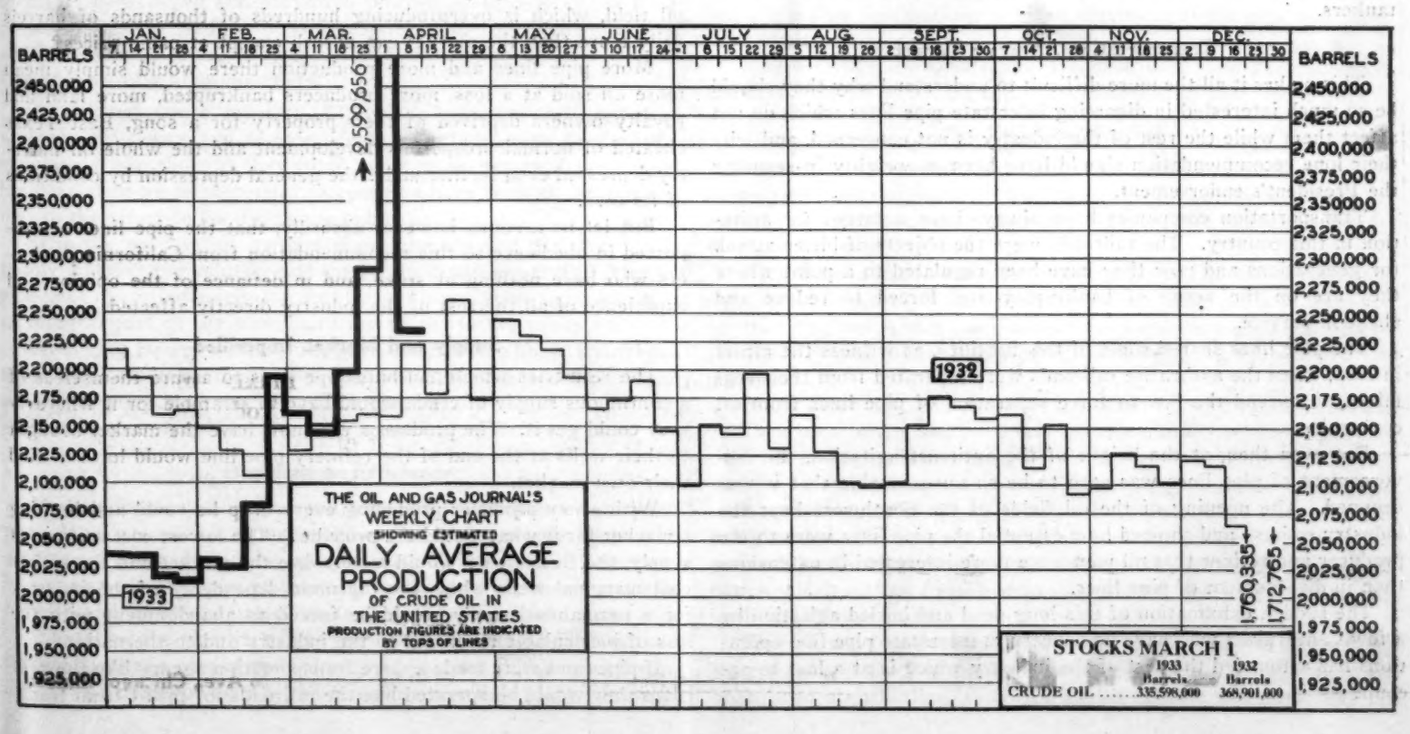
Crude Oil Production in the United States

Estimated daily average production for the week ending April 8, and a comparison with previous week and one year ago, follows:

	Apr. 8	Apr. 1	Apr. 9, 1932
Oklahoma—			
Oklahoma City*	82,835	134,685	128,160
Seminole-St. Louis	106,720	97,540	118,145
Remainder of State	197,385	195,705	205,430
Total Oklahoma	386,940	427,930	451,735
East Texas—			
Lathrop	174,715	304,210	124,294
Kilgore	127,245	220,405	105,285
Joiner	132,450	235,625	107,990
Total East Texas*	434,410	760,240	337,569
West Texas	162,645	162,755	178,420
North Central Texas	73,261	75,295	74,215
Texas Panhandle	45,407	52,563	46,855
East Central Texas	58,810	58,147	55,190
Gulf Coast—Texas	149,525	148,771	106,050
Southwest Texas	51,609	54,035	65,215
Total State of Texas	975,667	1,311,806	863,514
Kansas	120,985	121,250	97,510
North Louisiana	30,730	30,125	28,170
Gulf Coast—Louisiana	40,835	37,654	31,675
Arkansas	30,315	30,585	34,995
Eastern Fields	107,000	104,000	115,000
Rocky Mountain area	75,430	75,806	86,717
California—			
Santa Fe Springs	53,500	54,000	66,250
Long Beach	68,000	68,500	80,000
Playa Del Rey	11,750	11,500	18,500
Elwood	13,000	13,500	17,750
Kettleman Hills	57,250	57,750	59,500
Remainder of State	259,500	255,250	273,250
Total California	463,000	460,500	515,000
Total United States	2,230,902	2,599,656	2,224,316

Decrease 368,754 bbls. daily.

*Fields shut down part of week.



Neither Reasons Nor Facts Offered in Support of Recommendation Against Pipe Lines

By W. T. ANDERSON

It has been said that no president of the United States ever had such popular support as President Roosevelt has held since he entered office.

The country, judging him by what he does, has given him complete confidence.

It is of vital importance, therefore, to the oil industry when he says, speaking of the proposal to divorce pipe lines engaged in interstate commerce from other branches of the oil industry that "I am of the opinion that this is a reasonable request and that such legislation should be enacted at as early a date as possible."

In the absence of any information as to the reasoning which led Mr. Roosevelt to this opinion the oil industry is naturally curious about it. Practical daily experience covering the life of the industry has, on the contrary confirmed the industry at large in the opposite opinion.

The President bases his opinion on the recommendation of "the Independent Petroleum Association Opposed to Monopoly." That recommendation merely says: "We favor the divorcement of pipe lines from refineries, distribution and production in the petroleum industry." No reasons.

The Committee of Fifteen composed in equal parts of representatives of the governors of the oil producing states and Rhode Island, of the major oil companies and of the independents, made no such recommendation and in fact the subject was not even brought before them. These represented ninety-nine and three-fourths per cent of all the oil producers represented at the Washington conference. The minority whose recommendation was the basis for the President's opinion were purported to represent only 57 producers out of over 20,500 represented at the Washington conference or about one-fourth of one per cent.

And most of these 57 were from California where there are no interstate pipe lines to be divorced, the California lines being intrastate, California producers shipping their oil to outside markets by tankers.

Transportation Always a Target

This makes it all the more difficult to understand why they should be so much interested in divorcing interstate pipe lines which do not affect them while the rest of the industry is not concerned, and why their lone recommendation should have been so weighty in securing the President's endorsement.

Transportation companies have always been a target for agitation in this country. The railroads were the objects of bitter attack for generations and now they have been regulated to a point where they are on the verge of bankruptcy and forced to reduce and abandon service.

The pipe lines shared some of this hostility, as witness the effort in 1906, when the anthracite railroads were separated from their coal mines, to extend the law to force separation of pipe lines from oil companies.

But even then, at the height of the antitrust agitation, the divorcement of pipe lines was seen to be so unreasonable that it was dropped. The opening of the oil fields of the Southwest kept the industry so busy and showed how essential the pipe lines were to the producer and refiner that oil men were more interested in extensions than in divorcement of pipe lines.

The sudden exhumation of this long dead and buried agitation by a few Californians who have no concern in interstate pipe line operations has astounded the rest of the industry which is at a loss to account for it.

Here and there you may find throw-backs to the agitation of 1906 who never allow changed conditions to alter their opinions. To them the oil industry of today is still only the "downtrodden producer" of the pioneer eastern fields grappling with the "unholy octopus."

The dissolution of 1911, the increasingly competitive struggle between the separated units, the growth of great major independent companies, the development of the oil business into the third largest manufacturing industry in the country, means nothing to them. They are still living in the days of Pithole and Oil Creek.

Meanwhile the great big industry which has passed them by continues to go steadily ahead, concerned only about its daily problems and paying no attention to the moth-eaten phrases of a by-gone day.

The agitators of today are fighting a man of straw set up by themselves. The sponsors of the divorcement of pipe lines call themselves an "Association Opposed to Monopoly." What monopoly? Where is it?

If the integrated pipe lines were a tool of monopoly why have they not been put to work? Why have they not used their profits to undersell their competitors and drive them out of business as the advocates of divorce affect to fear they may do.

Why Have Independents Grown?

The pipe lines have been integrated ever since there was an oil industry. If their purpose was to promote monopoly why have they delayed the attempt all these years? Why have they permitted these great rival major independents to grow and grow into more powerful competitors?

Why has this supposed monopoly allowed the industry to struggle through years of depression due to overproduction that beat down prices and destroyed profits?

The answer to all these questions is, of course, that the "monopoly" exists only in the imagination of those who "star" themselves on the billboards of publicity as "opposed to monopoly."

How is "monopoly" faring in East Texas, the world's greatest oil field, which is overproducing hundreds of thousands of barrels daily more than the market can absorb except at panic prices?

More pipe lines and more production there would simply mean more oil sold at a loss, more producers bankrupted, more land and royalty owners deprived of their property for a song, East Texas cheated of normal prosperous development and the whole oil industry depressed even further under the general depression by conditions of its own.

But let us assume, however absurdly, that the pipe lines are divorced in obedience to this recommendation from California producers who have nothing at stake, and in defiance of the opinion and experience of all the rest of the industry directly affected.

Supply and Market Imperilled

The refineries which had built pipe lines to assure themselves of a continuous supply of crude would have to scramble for it wherever they could get it. The producers who now have the market brought to their wells at the end of the refinery pipe line would have to find their own market.

With every producer producing every drop he could and hunting a market for it what would the price be? The lowest cost sources of supply, the flush fields, would monopolize the market and the higher cost marginal wells which are the main dependence of the industry for a permanent supply would be forced to abandonment with the loss of incalculable resources to the industry and to the nation.

If pipe lines were made a mere transportation agency like the railroads they would be operated like the railroads for profit from trans-

portation only. There would be no extra services. The shipper could take what he was offered or leave it and that would be all.

The railroads furnish no trucks to haul your shipments to the tracks and when they build you a spur track you pay for it. The gathering lines which bring the oil from the wells to the trunk pipe line are constructed by the pipe lines at their own cost and the pipe lines gauge and test the shipments. The railroads perform no parallel service.

An integrated oil company like the Standard of Indiana could take over the 9,267 stripper wells that were abandoned by the separate Prairie Pipe Line Company because the Indiana company had a market for the oil and the Prairie did not. With divorcement of the pipe lines from the integrated oil companies what would become of them?

The plea for divorcement is set up on presumed behalf of the small producer who would be the first to suffer by separating the transportation of oil from its market.

With this so plain why then should anyone advocate a change so destructive? The explanation is very simple.

There are always those who are attracted by well-sounding phrases. The average man thinks he could get along better if it were not for somebody else. He is prone to blame difficulties on others.

In the early days of the oil industry, and in most business in those days, the motto to which President Roosevelt recently referred, "Let the buyer beware," was typical of business morality. It was everybody for himself and the devil take the hindmost which he generally did.

Origin of Agitation

The resentments of those days are deeply ingrained in the oil industry and hard to eradicate, even though conditions and business morality are altogether different. How far we have come to a better system is shown by President Roosevelt's declaration that to the old motto there must now be added "Let the seller beware."

The people at large and the business and industrial world have seen that the old business policy of competitive war to the death meant mutual annihilation and that permanent prosperity can be built only on give and take, mutual advantage.

Who bothered about the buying power of the workers in the old days when cutting costs was deemed the only way to make money?

But here and there you find "throw-backs", survivals of the old theories; hard boiled and encrusted individuals who insist on their pound of flesh regardless of consequences and irreconciliables who still persist in agitating against non-existent "monopolies." Modern Don Quixotes fighting windmills.

So, although the oil industry at large has been very well contented with the efficiency and service of the integrated pipe line system individuals who thought they could make more money if they could handicap their more successful competitors have revived old animosities in the effort to hoodwink the public.

Strip the proposal of its demagogic humbug and the question is simply whether the industry and the public would be served better by pipe lines operating solely for profit as transportation agencies or as an integral part of the manufacturing of petroleum products.

Would the farmer with a truck or in these days a horse and wagon of his own be better off if he were forced to divorce it and rely upon a transportation company to haul his goods?

That is the whole situation in a nutshell.

Handicap on Efficiency

Modern industry is built upon efficiency and economical operation. Mass production of automobiles was made possible by providing factory transportation—conveyor belts for example. These facilities are an integral part of the plant, making for economy and efficiency which in turn is passed on to the public in reduced cost.

Separating the pipe lines from the refineries which built them and operate them as a part of their plant would be just the same as throwing out the conveyor belts in the modern automobile plant. It would be making it that much harder, instead of easier, to manufacture products economically and efficiently and with consequent lower cost to the consumer.

It would be an industrial step backward. It would throw the most destructive kind of monkey wrench into the machinery, scattering it to the four winds of heaven. It would separate the refiner from his supply. It would separate the producer from his market. It would leave the hundreds of thousands of producers with small stripper wells out on a limb whence there could be no return.

The producer who thinks he could get a better market if pipe lines were divorced would have more trouble finding any market at all and then in competition with the lowest cost production. The refiner without a pipe line who thinks he would profit by making pipe lines simple transportation agencies would find that pipe lines operated for transportation profit would have even less regard for his interests. The heyday of railroad ascendancy showed how much consideration transportation companies gave their shippers.

Effect on Extensions

How long would a wildcat producer have to wait for extension of a transportation company pipe line to an uncertain source of traffic? While the transportation management was waiting to see whether it would be worth while or not from a traffic standpoint the producer could whistle and his opportunity might be gone.

As to lower rates what reason is there to suppose a company interested only in revenue from transportation would lower its tariff? The other question is could they afford to lower rates?

With the pipe lines divorced from the companies which alone can make effective use of them what will become of the pipe lines? Mere divorce of stock interest will not satisfy the advocates of the change. Obviously nothing short of actual sale to outside interests would meet their desire.

But if the pipe lines are to be sold to interests outside the oil industry, purely as transportation companies, who is going to buy them and what is to be used for money? Flotation of new capital on a market like the present? And, of course, the interest and cost of that new capital will have to be met out of revenues which means rates.

What prospect is there of lower rates when overhead expenses are increased?

But the advocates of divorcement argue, the profits of the present pipe lines can be used to undersell competitors without pipe lines. Is it not the other way around? It is those without pipe lines who are shipping hot oil by rail and truck out of East Texas and selling it below the pipe line market. Will divorcement of the pipe lines help that situation?

Where companies with pipe lines have undersold the market it has been because of hot oil and not by sacrificing pipe line profits.

"Hot Oil" Real Trouble

Anyway it is absurd to suppose that the profits on a billion dollars in the pipe lines can make up for the losses on the eleven billions invested in the oil business outside pipe lines. That argument for divorcement does not click.

What then is left to back the recommendation of the "Association Opposed to Monopoly" (in California) which Congress is to be asked to enact into law without any such recommendation from the rest of the industry and in fact in disregard of its opposing opinion and experience?

In his other decisions since he has taken office President Roosevelt has been buttressed by sound arguments and explicit presentation. It is impossible to imagine that anyone, however gifted, can deal with the multitudinous issues, industrial, financial, economic and social, which come to the White House, without some time or other being misled. So far as the facts have been presented, so far as experience has demonstrated, all the evidence is against the recommendation which led the President to this opinion that pipe line divorcement should be enacted.

The Oil and Gas Journal has confidence in President Roosevelt's rugged independence of thought to believe that when the facts are brought to his attention, as in this publication, he will reconsider his

opinion and say so. All the world admires a man who is brave enough to admit a mistake, and no one doubts the courage of Mr. Roosevelt.

The immediate danger is that Congress may take snap judgment and cause irreparable injury to an industry which is in no condition to withstand an additional shock.

Would Prevent Stabilization

The oil conference at Washington was called at the suggestion of the President for the purpose of effecting stabilization in the industry which was recognized as one of the key logs in the general depression jam.

This was made plain in the statement of Secretary Ickes in opening the conference:

"Out of this maze of confusion and conflicting interests must come a means of control or limitation of production that will assure a continuing, adequate domestic supply of oil that will not and must not exceed actual consumption requirements. Only by this means can the industry right itself."

Not a word about danger of monopoly or about pipe line divorcement!

The first thing the minority did was to withdraw from the conference. The conference, representing the governors of the oil producing states, the major oil companies and the mass of the independents adopted their recommendations which were approved by Secretary Ickes and transmitted to the President. No such approval by Secretary Ickes is reported to have accompanied the recommendation of the fractional bolting minority for the divorcement of pipe lines which was not an issue at the conference.

This increases the mystery as to the weight attributed to that recommendation. Perhaps Congressional debate may elucidate it, otherwise it is difficult to see how Congress can reconcile the enactment of a divorcement law with the known facts in the case.

Text of the Bill Introduced in Congress to Compel Divorce of Pipe Lines From Oil Companies

By CHARLES E. KERN
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Apr. 10.—The question of divorcing pipe lines engaged in interstate commerce from other branches of the oil industry is again before Congress as a result of President Roosevelt's statement in his letter to governors of the oil-producing states that:

"I am of the opinion that this is a reasonable request and that such legislation should be enacted at as early a date as possible."

Hearings probably will be given on the subject by the interstate and foreign commerce committee of the House of Representatives, which did not approve such legislation as a result of its investigation in compliance with House Resolution No. 59 agreed to in the first session of the last Congress.

The committee made one of the most exhaustive investigations on pipe lines ever conducted on any subject and its report covering over 1,000 pages has now gone to press. It said that oil pipe lines were found, as a result of this investigation, to be plant facilities in an integrated industry, very different from railroads in that railroads carry all manner of freight whereas pipe lines are limited to one product. Pipe lines, the committee said, carry petroleum in one direction from a diminishing source of supply, and have been built primarily by oil companies.

"It appears very difficult," the committee said, "to apply the 'commodities clause' to oil pipe lines. If the oil companies were forced to sell the pipe line companies, who would buy them and who would build to newly discovered oil fields?

"It appears that whatever regulation of oil pipe lines may be necessary, it may be provided in recognition of the character of pipe line transportation and its relation to the oil business."

President Roosevelt's approval of pipe line divorcement, when operated in interstate commerce, from other branches of the oil industry was the result of a recommendation by the "Independent Petroleum Association Opposed to Monopoly" of which John B. Elliott, manager of Senator McAdoo's recent senatorial campaign in California, is president.

Bill Before Congress

Immediately upon seeing this recommendation by the President, Rep. Wesley E. Disney of Oklahoma revived his bill of December 8, 1931, and is now pressing for its consideration. This bill provides:

"That Paragraph 8, Section 1, of the Interstate Commerce Act, as amended, is hereby amended to read as follows:

"(8) It shall be unlawful for any common carrier subject to the provisions of this act to transport from any state, territory, or the District of Columbia, to any other state, territory, or the District of Columbia, or to any foreign country, any article or commodity, other than timber and the manufactured products thereof, manufactured, mined, or produced by it, or under its authority, or which it may own in whole or in part, or in which it may have any interest, direct or indirect, except such articles or commodities as may be necessary and intended for its use in the conduct of its business as a common carrier."

Representative Disney offered the following as an explanation of his bill:

"President Roosevelt's approval of the plan divorcing pipe line transportation of petroleum from its production, refining and sale requires the reintroduction of the measure I presented December 8, 1931, amending Paragraph 8, Section 1 of the Interstate Commerce Act, making it unlawful for any common carrier to transport any of its own products or any products which it owns or in which it has an interest with the exception of lumber.

"Any possible monopoly of the petroleum industry must depend upon the power of pipe line companies to grant or refuse to individual producers transportation of oil. It is at present within the power of great refining corporations to close all outlets to producers except on their own terms. Through the control of the only economic transportation agency, they are in a position to secure an unfair advantage over any possible competitors. Many companies controlling pipe lines make so large a profit on transporting oil that they can cut the price on their own products below production costs of their competitors. This bill would eliminate this source of monopoly.

"The maintenance of a fair price to be paid to the producer and the equal insurance of a reasonable price to be paid by the consumer must eventually depend upon some such legislation since otherwise the great "self-contained" corporations, controlling production, transportation, refining and marketing, would be enabled to make enormous profits by eliminating competition."

Congress May Next Be Asked To Divorce Motorist From Car

The outstanding feature of Representative Disney's explanation of his introduction of the bill to divorce pipe lines from the oil companies of which they are a part is that his reasons are all imaginary.

He speaks of any possible monopoly, not even asserting there is one or any danger of one. He says outlets for producers could be closed, not that they are closed or about to be closed. He thinks an unfair advantage might be secured but does not even allege that it has been attempted, or even contemplated. He opines that pipe lines make a profit that would allow them to cut the price of their own products below that of their competitors but does not offer any suggestion that this has been done or is being considered.

In other words, his reasons are all in his mind, having no existence in reality. The same reasoning would require him to introduce a bill in Congress divorcing every automobile owner from his car on the fear that he might run over somebody.

If Representative Disney has any better reasons for his bill the fact that he neglected to present them in his formal statement shows that they are even less worthy of consideration.

Similar to Logging Railroads

When the so-called "Commodities Clause" was added to the Interstate Commerce Act by the Hepburn Act of June 29, 1906, the only specific exemption provided was for transportation lines developed as adjuncts to the logging industry. Tracks laid to a logging area are usually advanced from the center of one tree cutting area to another as the cut progresses. Almost continual new investment in rails is necessary and there is a frequent lifting of rails in one cut-over district and just as frequent a relaying in a new district. The analogy between a logging railroad and a petroleum pipe line is, of course, readily apparent to anyone at all familiar with the constant need of pipe line companies for new money to lay small extensions to existing systems, and the same arguments applied in 1906 to exempt logging ventures now appear applicable to exempt petroleum pipe lines from the provisions of an enlarged Commodities Clause or its equivalent.

No Reason to Change Ownership

That interstate pipe lines already are under control of a Federal bureau, hence there is no reason for a change in the present situation, is the contention of Henry M. Dawes, president of the Pure Oil Co., an independent company, who said:

"The President's suggestion to divorce the ownership of pipe lines from producing companies is one which at this time I would not presume to criticize. He cannot be expected in the present emergencies to have had time to digest the exhaustive data prepared at the time this suggestion was formerly considered by Congress. Interstate pipe lines are already under the control of the Interstate Commerce Commission; their operation, rates and all matters involving the public interest can be regulated by it. Since the Government is now in position to tell the pipe lines what they should do, there is no reason to change their ownership."

Posted Price Abandonment; No Lines Extended and Curtailment of Wildcatting Probable

By ANDREW M. ROWLEY

So many factors are involved in the proposal to divorce interstate pipe lines from other branches of the petroleum industry, all of which would react almost immediately against the individual crude oil producer and the small refiner, it must be taken for granted these factors are unknown to or have not been given careful consideration by those sponsoring such action.

There is reason to believe the present system of posting prices for crude oil by the major purchasers would be abandoned, with a resultant cut-throat competition for markets upon the part of the smaller producers and the inevitable result of such competition-distress prices. There is no doubt thousands of present connections to stripper wells and wells not ideally located or wells which are making only a small production would be severed at once. Such wells would be lost forever to their owners whose means of livelihood from this source would be cut off.

Initiative on the part of oil men to seek new production would be killed because they would be unable to get pipe line outlet for any crude oil they might discover until they had developed a production large enough to insure a return of investment on the part of a pipe line company interested only in income from transportation.

Farmers Would Suffer

Farmers and hundreds of thousands of royalty owners would suffer because large buyers undoubtedly no longer would purchase oil from properties where royalty interests were split into many units, involving great expense in the accounting and legal departments in checking abstracts and making payments for royalty oil.

Ratable taking laws would be rendered ineffective because the buyer of crude oil no longer would own or control the pipe line company and, consequently, could not be forced to take his crude oil ratably from different properties in the field.

Present methods of buying crude oil, based on the posted prices, favor the producer in that the same price is paid over a wide territory regardless of the accessibility of the production to refineries. Identical prices are received by producers of properties located 200 miles or more from refineries and those whose output comes from wells on properties adjacent to refineries. Such an arrangement has been made possible by two conditions; first, because the purchasing company, owning the pipe line, desired to maintain friendly relations with all producers on its lines so that the output of these producers would be available to the purchaser and pipe line owner in the event of a shortage of crude oil at any time; and, secondly, because pipe line transportation charges could be absorbed by the company because of the greater value involved of friendship of producers connected to the line and the possible need of this production in the future.

But with the pipe line divorced from the purchasing company, there would be no incentive on the part of the buyer to purchase crude oil from distant points if oil nearer his refineries were available. And, if purchases were made from such distant points, it seems entirely logical, under the new arrangement proposed, the buyer would deduct from prices he would pay for such oil the difference in transportation costs involved.

May Abandon Posted Prices

Consequently, the system of posting prices for large areas comprising several states, as is done now, in all probability would be abandoned. Buyers would be in a position to turn to a plan advocated in the past by some of contracting for their crude oil requirements wherever they might get it at the best advantage.

Divorcing the pipe lines from producing and refining companies would eliminate from the business the element of personality which has been such an important factor in all dealings since the beginning of the business. Dealings between producer and purchaser-refiner, over a long period of time, have developed friendships and mutual confidence in integrity which has prompted pipe line companies to maintain connections with old wells with a small output and to build extensions to new wells simply because the owners of these wells have been in the business a long time and have demonstrated their integrity and interest in the welfare of the industry. It is simply a case of taking care of an old customer. Costly extensions of pipe lines have been made to wildcat wells just because of these old business relationships and the desire to maintain such relationship for future business.

Divorcing pipe lines from refinery or production ownership would sever the personal connecting link between the producer and his market because the pipe line, under the proposed plan, would have but one interest—its income from transportation of crude oil. It would be forced to adopt a hard-boiled attitude in the matter of making extensions to its lines because, with but one interest in the business, that of carrying crude oil, it could not afford to expend thousands of dollars for extensions to serve but one or two wells whose ultimate production and the quantity of crude oil to be shipped must necessarily be a very doubtful matter.

The Facts About Pipe Lines

Believing that the pipe line situation is not understood at Washington or by the public at large, The Oil and Gas Journal, as a service to the industry, has had the proposal to divorce pipe lines from their integrated companies analyzed from every aspect by members of its staff after a thorough investigation.

This information is herewith made available for members of Congress who have the bill before them.

Would Kill Initiative

The future of the petroleum industry and the investment of billions of dollars in the business depends on the discovery of new fields and additional production. This is the job of the wildcatter. With pipe lines separated from producing and refining companies, activities of the wildcatter would be curtailed almost to a vanishing point because he would know he could not hope to get pipe line connections to wells far removed from existing pipe line systems until he developed sufficient production to warrant the great expense of building pipe lines to the newly discovered area. This would necessitate the drilling of a large number of wells to prove up the territory and to develop the quantity of production necessary to insure the bringing in of a pipe line. What wildcatter could afford to drill this number of wells or wait until he developed a large production?

Under the present system the pipe lines owned by producing or refining companies—and most of them are owned by companies having both production and refineries—the chances are greatly in favor of the producing branch of the integrated company owning the pipe line having leases in the vicinity of the production discovered by the wildcatter. The pipe line company then could afford to take a chance on extending its line to the new productive area as development of this area might show its own properties were productive. It would be interested in aiding the development of the area and the construction of a pipe line into any area stimulates activity in that section because of the quick availability of markets under the present system.

But with a pipe line company owning no leases or possible productive acreage or no refineries in need of crude oil which might be developed, there would be no reason for constructing a pipe line into the new territory until developments assured a large production for a long period of time.

Effect on Royalty Owners

It has been reported certain royalty owners are supporting the proposal to divorce the pipe lines from other branches of the business. The farmers and royalty owners would be in a worse position, under the proposed plan, than even the small producer. At the present time pipe line companies are taking oil from properties where the royalty interest of one-eighth of the production is divided into more than 5,000 units. In other words, each unit represents one five-thousandth of one-eighth of the production of the one lease. There has been at least one case in the oil business where the one-eighth royalty was divided into more than 2,000,000 units. The Prairie Pipe Line Co. and Prairie Oil & Gas Co. had such an experience in the old Burkburnett Field in Texas. It is a rather common practice to sell royalty interests to a large number of persons in the form of units. Mr. J. Edward Jones, one of those reported as supporting the pipe line divorcement proposal, probably is well acquainted with this phase of the business.

Purchasing and producing companies now lease land where royalty interests are divided into many units because they may happen to have pipe lines near the territory leased. It has cost these companies, in some instances, as much as $100 to $1,000 in time of attorneys to examine abstracts for such leases. Without ownership in pipe lines adjacent to such leases these producing and purchasing companies undoubtedly would refuse to even consider leasing land where royalty interests were divided into a large number of units. The expense involved would be too great and there would not be the pipe line interest to offset this objection.

Buyers Would not Bother With Units

Also, for the same reason purchases of crude oil from leases where royalty interests were split up into many units would be stopped or very greatly curtailed. Just a week ago one of the large purchasing companies in Tulsa sent a check for 2 cents to a man who owned a one nine hundred and sixtieth of the one-eighth royalty under a lease. This represented the amount due that royalty unit holder for his share of a month's production from that lease. The example is not unusual. There are thousands of cases where payments total only a few cents a month. It cost the purchasing company 2 cents Federal tax on the check and a 3-cent postage stamp, a total of 5 cents, without figuring any expense involved in the bookkeeping or overhead or even the envelope, in order to pay this man 2 cents. How long would this purchasing company, or any other, continue this policy if past or future business relationships connected with the pipe line were not involved as they would not be if the pipe line were owned by another company?

It is extremely doubtful if anyone would even consider financing or constructing a pipe line if the pipe line were not permitted to own producing properties or refineries which would assure business for the line. Past experience is all against such procedure. Pipe line construction is seldom initiated except by interests already engaged in the oil business and owning production or refineries. The only exception which comes to mind is that of the Crusader Pipe Line Co., organized in 1925 as purely a

transportation company. That company constructed a pipe line from the Smackover Field in Arkansas, when that field assured considerable production, to a point on the Mississippi River. The line was completed but it never transported a barrel of crude oil and was entirely unused for a long time after its construction. Some time ago it was sold or leased to a natural gas company for use as a natural gas carrier.

What Happened to the Prairie

Everyone in the oil business and those interested in oil industry securities are conversant with what happened to the Prairie Pipe Line Co. within the past two years. That pipe line company was the transportation division of the Prairie Oil & Gas Co. which was divorced from the Standard Oil Co. of New Jersey by the dissolution decree made effective in 1911. The pipe line company continued as a part of the Prairie Oil & Gas Co. until the former was declared a common carrier and divorced from the Prairie Oil & Gas Co. in 1915. The Prairie Oil & Gas Co. owned extensive production properties and had a marketing organization which developed a big outlet for its own production and that of others, all of which crude oil was transported through the lines of the Prairie Pipe Line Co. After the divorcement of the Prairie Pipe Line Co. from the Prairie Oil & Gas Co. in 1915 the pipe line company continued to enjoy a good business because of its former ownership by the Prairie Oil & Gas Co. and because of the crude oil production developed by the latter company and the markets that company had built up for its production and that of others using the Prairie Pipe Line Co.'s lines.

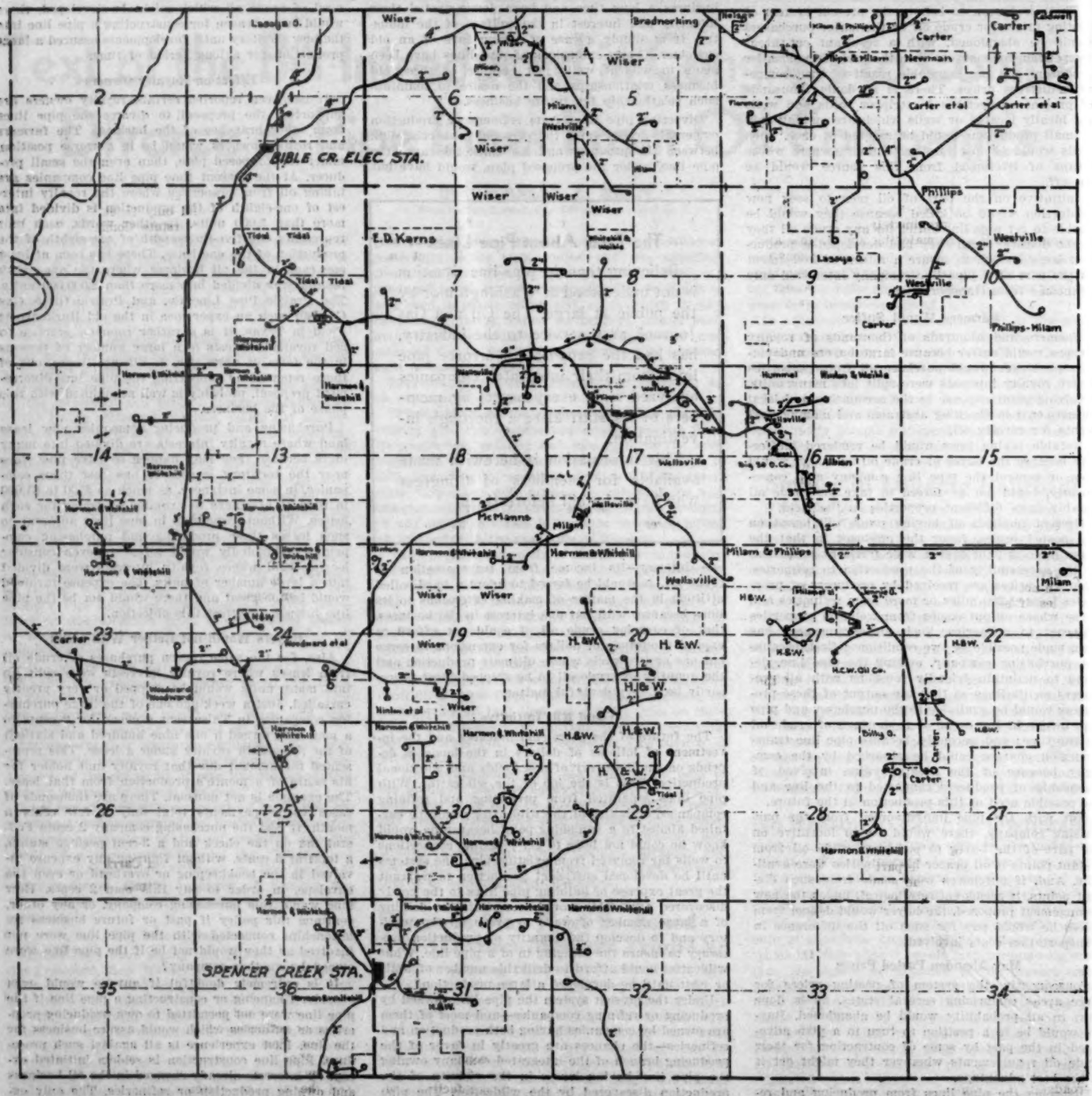
But as the markets of the Prairie Oil & Gas Co. dwindled and its former customers, or buyers of its crude oil, developed their own production and facilities for handling this production, the business of the Prairie Pipe Line Co. decreased appreciably. That business finally dropped to a point where a reasonable return could not be procured from the investment in the pipe line system.

This dwindling of its markets finally forced the Prairie Oil & Gas Co. to withdraw from the field as a purchaser of crude oil, which it did on January 1, 1931. The company had been buying crude oil from 1,335 leases containing 9,267 wells in northeastern Oklahoma and southeastern Kansas. These wells had a potential production of 24,221 bbls. daily.

Disconnected From 9,267 Wells

The Prairie Pipe Line Co., not having any market for this crude oil and no refineries, was forced to disconnect its lines from these 9,267 wells and the owners of these properties were left without a market for their product. If this condition had continued for any great length of time it would have forced abandonment of all of these wells with the resultant loss to the owners as well as to many communities interested in the development of the area and the income of its citizens from these wells.

The situation was extremely serious both for the



Map of a part of the gathering system of the Stanolind Pipe Line Company in northeastern Oklahoma and southeastern Kansas which is connected to 6,600 wells with a total daily production of 4,900 bbls.

owners of all these wells who depended upon them for their livelihood and to the communities located in this area. Mass meetings were held and the entire citizenship interested itself in the difficulties in which the producers found themselves by reason of having no market or outlets for their crude oil production.

Not any financial, civic or business group could afford to construct pipe lines to take care of these wells. The cost of such a line would be entirely too great and the revenue from transporting this small amount of crude from so many leases would mean a considerable loss to the pipe line company. The owners of these small wells were "just out of luck."

At this juncture committees of citizens called upon the Stanolind Pipe Line Co., which had a pipe line near the section involved. Although it realized the expense of connecting these small wells and so many leases meant a big loss to the company, the Stanolind had its engineering department go into the area, map out a gathering system and construct such a system to connect these wells and take care of the little producers.

Large Expenditure Involved

Accompanying this article is a map of a portion of the gathering system constructed to take care of these small wells. The area in question covered about 25 miles north and south, so the map shows only a part of the area. In connecting these wells, the Stanolind Pipe Line Co. connected to 6,600 wells with a total daily production of only 4,900 bbls. The gathering lines involved in the construction comprise approximately 690,000 feet of 2-inch pipe, 260,000 feet of 3-inch pipe, 100,000 feet of 4-inch pipe, and 4,000 feet of 6-inch pipe, with a total investment of approximately $300,000, including pump stations. The main line out of this area to the nearest oil field consists of approximately 160,000 feet of 6-inch pipe and 15,000 feet of 4-inch pipe with an investment of $200,000. Consequently the investment in connecting these wells totals one-half million dollars.

There is no need to ask what would have happened to all these little producers, to these thousands of wells and to this old settled production if the pipe lines were divorced from producing and refining ownerships. Because it is admitted by all a pipe line company interested only in income from transportation of crude oil would not have even considered making these connections.

Ratable taking laws enacted in some states for the protection of small producers would be made ineffective through divorcement of pipe lines from other branches of the oil business. At present refiners or purchasers of crude oil owning pipe lines are required to take ratably from properties in a field the requirements of the buyer. In other words the buyer, if he has production of his own in the field, can not take all his requirements from his own properties, if he owns the pipe lines, but must take a ratable part from other property owners.

But under the plan proposed of divorcing pipe lines, the purchaser then would have no ownership in the pipe line and no interest in it. The pipe line would have no ownership or interest in any of the producing properties or in the refineries or markets from which purchases would be made of the production of the field. Under these circumstances the buyer could not be forced to purchase from all producers in the field and could limit his buying to whatever producer or producers he desired. Other producers in the field, now enjoying a market for their production under the present system would be forced to go out and develop their own markets under the proposed plan.

A thorough study of the subject serves only to increase the objections on the part of the producing branch of the industry to the proposal. And, a sincere effort to ascertain even one reason in favor of the change failed to develop any such reason.

What Is Behind Movement?

Members of Congress, both senators and representatives, should be interested in ascertaining what is behind the proposal to divorce interstate pipe lines from other branches of the oil business. John P. Elliott, who sponsored the proposal, is from California, and there is not an interstate pipe line in that state. It has been known for a long time that railroads of the country would like to see pipe lines divorced from other branches of the petroleum industry.

Some Important Points in the Pipe Line Situation That Have Been Too Frequently Overlooked by Critics

A pipe line consists primarily of a line or system of steel pipe installed under (or over) lands or rights of way, together with such appurtenant standard equipment as may be necessary to gather the oil at the wells and keep it moving to its destination and to store it at such points as may be desired. The construction of a pipe line offers no engineering or structural difficulties that are in any way unusual or uncommon in other industrial projects. In fact, a pipe line is simply the expansion of a connecting link in the production and distribution of a commodity. It is a part of the plant whereby a corporation may complete the operations required in producing, refining and marketing petroleum products. The fact that a pipe line is classified as a common carrier does not in any way change the nature of the investment itself.

The pipe line, therefore, as a transportation medium, is irrevocably linked up with producing and marketing. Owing to the very nature of oil and gas, which causes rapid changes in the volume of production and locations of the supply base, the pipe line investment can not economically stand alone. The risk must be distributed to all phases of the industry if capital is to survive.

Pipe Lines and Railroads

A natural tendency in considering the nature of the pipe line investment is to compare it with the railroad investment in the thought: first, that the pipe line is rendering a transportation service; and secondly, perhaps, that it has been brought into somewhat the same category as the railroad by the Interstate Commerce Commission. Actually there is little, if any, direct comparison.

A railroad is ordinarily constructed in a new territory for the purpose of development, and the justification for its construction rests upon the gradual economic changes which take place by virtue of potentialities for movement of commerce and the consequent community growth following thereafter. On the other hand, a pipe line is the immediate necessity of the moment. It starts off at once with its greatest utility, and is subject thereafter to gradual decline measured by the depleting commodity for which it is furnishing transportation.

The railroad then, is economically constructed to serve a growing service demand, whereas the pipe line requires its maximum investment at the beginning and serves thereafter a declining service demand.

Valuation Basis

It would appear as fundamental, therefore, that the concept of fixing pipe line rates upon the basis of the fair value of property "used and useful in service" could not stand economically. Capital could not be found to enter upon such a hopeless venture wherein the full use of the investment and consequent return would be momentary and subject thereafter to certain and rapid decline; or if the initial step were to be taken upon such a premise, it would have to be accompanied by a rate of return and provision for amortization all out of proportion to the service rendered or even the capacity to pay.

The only apparent relation between the railroads and the pipe lines would appear to be in the relative nonmonopolistic status. Rates and charges, in so far as the railroads are concerned, have never been determined upon the basis of valuation. If this were to be done, two lines serving exactly the same territory and having the same terminals, but representing a different mileage and, therefore, investment, would be compelled to apply different rates. Obviously the business of the company having the greater investment would not long survive, whereas the company having the lower investment would ultimately obtain the greater portion of the business and increase its net return accordingly.

The same condition applies to the pipe lines with additional practical difficulties. Pipe lines of different companies originating in the same field and pools, and ultimately reaching the same destination, must obviously charge the same rates, regardless of the relative investment in the facilities or the degree of "use" of such facilities at the moment.

A tentative computation for the year 1931 was reported to show in excess of 19 per cent return upon the investment for a substantial group of pipe line companies, including all of the larger companies.

But the pipe lines have not been burdened with their fair proportion of the huge capital losses which are inevitably linked with the oil industry, and, in turn, the operating statements fail to provide properly for the similar hazards of the future. The investment of the companies has heretofore been reported under the limited classifications established for common carriers by pipe lines, and the figures have been confined almost entirely to the direct expenditures in construction. There has been omitted, for example, the value of the oil required to fill the lines, a substantial and permanent investment without which the commodity could not move at all and which is just as essential as the rolling stock is to a railroad transportation company.

Then there is the enormous intangible but equally as necessary capital that has gone into the complete economic unit and which has been absorbed by the producing and marketing ends of the business. The only means by which the true investment in the pipe lines could be determined would be through a survey and appraisal of the oil industry as an entirety. Such an attempt would result in a national situation second only to the valuation of the railroads by the Interstate Commerce Commission.

Many Complications

Again there would be the question of accounting, almost as involved. Annual charges to depreciation for pipe lines assume complications not present to any material degree in other forms of utilities. The engineering concept of life expectancy of the physical properties might apply in isolated cases, but generally would have little, if any, bearing in a broad and equitable investigation. The life of gathering lines is controlled primarily by the rate of decline and ultimate life of the pool, and the life of trunk lines, in turn, by the conditions in the fields which they serve. In specific systems the outlet demand for petroleum and its products, nationally and perhaps internationally, regulates the business and tends to influence the life of the system. Finally, the limitations of production to market demand, as provided under the latest 1932 statutes, will directly influence the degree of use and consequent life of the pipe lines in a manner subject to change without notice and entirely apart from other considerations.

Reserves for retirement and replacement, as set up at present by the various pipe line companies, are being accrued through annual charges ranging from as low as 3 per cent to as high as 15 per cent or more per annum. This wide range, as applied to properties essentially simple in nature and directly comparable in character of investment, might reflect unsound accounting practices, but it is more likely that it proves the necessity for individual treatment by the respective pipe lines in accordance with each particular situation.

So much for the almost insurmountable difficulties confronting any attempt to promulgate rates and charges upon the "aggregate value—fair return" basis.

Not Really Common Carriers

If these pipe lines were common carriers to any substantial degree there might still be some merit in an attempt at enforcement, but they are not. One of the largest oil companies stated in a recent interview that 95 per cent of all the oil run by its subsidiary pipe line company was its own oil, and others will approximate the same percentage. Now assume, we will say, that pipe line rates could be lowered, the burden would immediately be shifted to the production, or more likely to the refining and marketing end of the business. In the instance stated the benefit would affect only 5 per cent of the common carrier operations, and in fact whatever the average percentage, it would be linked very largely with producers or refiners who themselves controlled production and market outlets.

Pipe Line Severance Plan Threatens Continuance in the Refining Industry by Independents

By C. O. WILLSON

"How does the average independent refiner fit into this picture of divorcing interstate pipe lines from the rest of the oil industry?"

The answer of a few refiners who usually have given only superficial consideration to this proposed action probably will be: "Fine, let's have it, for then our big competitors will not have any advantage over us in the form of transportation profits and we will be on a parity with them in all phases of operation."

A more detailed study of this proposal over the past two weeks, however, has dampened the enthusiasm of many proponents and has raised the question as to whether or not this latest cure-all for the ills of the oil industry does not in fact threaten the continuance of the independent refiner who through the many ups and downs of the industry has been able to maintain a strongly competitive position as a manufacturer of petroleum products.

A panacea to aid the independent refiner is not new in the oil industry. The medicine, as in this case, has usually been worse than the disease and the fact that the independents have survived is a tribute to their general hardiness rather than the cures.

Pipe Line Profits

The arguments in favor of taking pipe line ownership and operation outside the oil business usually start off with the statement that at present large integrated companies are not concerned with making profits in their refining, producing and marketing operations, for the reason that the returns in their pipe line operations are sufficient to provide profits on their entire investments.

No more misleading statement could be made regarding the source of profits in the oil business as is apparent from a comparison of investments in the several branches of the oil industry and a study of earning statements of both large and small integrated companies. The total assets of the oil industry are variously estimated as between $10,000,000,000 and $12,000,000,000 and of that total the investment in interstate pipe lines is about a billion dollars. The contention that less than 10 per cent of the total investment can carry 100 per cent of the load in regard to profits is ridiculous on its face.

It is true that when all the unprofitable pipe lines that have been built over the past few years are removed from consideration the remainder have shown substantial returns on the investments. But it is certain that for the industry as a whole this profit in unfavorable years has not offset the losses from the several billion dollar investments in the discovery and production of crude oil at one end of the lines and the equally large expenditures in refineries and marketing facilities at the other end. The truth is that in the few years the industry has shown satisfactory profits all branches were on a favorable basis and the revenue accruing from pipe line operation was a small percentage of the total. The significance of this situation is that pipe line profits are not the controlling factor in the oil industry's operations and the fact that many base their arguments on this false premise accounts for the unsound conclusions as to the benefits that will accrue to the entire industry, particularly the independent branches, with the removal of pipe line ownership and management from the oil industry.

Importance of Transportation

To appreciate just what this proposed change in pipe line operation means with particular reference to the independent refiner it is first necessary to understand the part that transportation plays in the movement of crude oil from the fields to the refineries and from the refineries to the consuming points. For instance, the three main crude oil producing states—Texas, California and Oklahoma—in 1932 produced 641,993,787 bbls. of crude oil or 82 per cent of the total domestic supply in the United States. The same comparative situation has prevailed for several years. These states, based on gasoline tax reports, consumed only 2,368,748,000 gallons of gasoline, or 15.3 per cent of the total domestic consumption in 1932, which totaled 15,456,975,000 gallons.

The three states, according to The Oil and Gas Journal's Annual Refinery Survey on April 1, 1932, had 216 operating refineries with a daily crude oil capacity of 1,965,295 bbls. This amounted to 51 per cent of the total number of operating refineries in the United States and 53 per cent of the daily crude oil capacity. From the foregoing data it is apparent that only a small fraction of the crude oil produced and refined in these three states is consumed within the state boundaries. The remainder is transported in pipe lines, rail, water and truck shipments to domestic markets throughout the United States with a large export movement.

Another method of illustrating this difference in locations between supply and demand for petroleum products is to consider the Mississippi River as the dividing line. The states east of the river require 60 per cent of the gasoline consumed in this country and a similar percentage of other petroleum products but produce less than 6 per cent of the total crude oil which means that the eastern states are dependent on western states for the bulk of their petroleum supplies transported either in the form of crude oil or finished refinery products.

Position of Independent Refiner

The position of the independent refiner in this supply and demand situation is not generally understood.

In general the trend has been to build and expand major refineries adjacent to large consuming points east of the Mississippi River. These refineries usually are connected to Texas, Oklahoma and other Mid-Continent fields either by pipe lines or water transportation facilities or a combination of the two. California also furnishes the eastern half of the United States with a limited quantity of crude oil. It is worthy of note in this connection that, considering the quantity and distance involved, the cheaper water transportation is as important as pipe lines in the eastern movement of crude oil and refinery products from the sources of supply in the Southwest. The present plan of divorcement for pipe lines does not include water transportation.

While the ideal arrangement might be to refine all the crude oil required by states east of the Mississippi River at eastern points, this objective has not been obtained and the strong competition that independent refiners west have been able to furnish accounts for this situation. These refiners, due to certain advantages peculiar to their size and method of operation, have been able as a unit to maintain their competitive position and, barring outside interference, there is no reason to believe that this situation will not continue.

In the entire United States, according to the Journal's 1933 survey, there are 424 operating refineries with a total crude oil capacity of 3,696,410 bbls. daily. In this list there are 25 refining organizations with 150 refineries which are classed as major or semimajor operators and which together have approxmiately 75 per cent of the total refining capacity in the United States. The remaining 275 plants of relatively small capacities belong to over 200 independent refining organizations.

Results of Lower Rates

It is usually claimed that the separation of pipe line ownership and operation from the larger companies would prove beneficial to this group of independent refiners and this in turn would strengthen the position of all the smaller operators in the industry including independent producers and jobbers in the distributing end. In the first place it is contended as a favorable development that under separate ownership and Federal supervision present pipe line tariffs would be reduced which in effect would mean that refineries located long distances from the fields would pay a lower delivered price for their crude oil supplies. In the case of the gasoline pipe lines the tariffs which are now approximately the same as the rail rates would also be reduced.

It is difficult to see just how this would aid the large group of independent refiners, a majority of whom are located in the Mid-Continent area of Oklahoma, Kansas, inland Texas, Arkansas and North Louisiana with smaller representation in the Rocky Mountain states, Ohio, Pennsylvania, West Virginia and Kentucky. California also has a large group of independent refiners but they are not directly concerned in this proposal due to the fact that crude oil and refinery products are not transported by interstate pipe lines.

Increase Disadvantage

With the lower pipe line rates it is reasonable to assume that the prices on refinery products at the larger refineries located in the major consuming points would be reduced. It is equally as obvious that this development would increase the disadvantage of independent refiners who ship their gasoline and other refinery products long distances by rail tank cars in competition with the large operators whose tank car shipments are usually confined to short hauls. Thus the lower pipe line charges would simply mean that the independent refiner operating in Oklahoma, Kansas, Kentucky and many other points would have to absorb a greater transportation differential in the prices received for his products at his plant.

This additional handicap to the refineries located adjacent to fields, particularly in the Southwest, would be serious and no doubt result in many shutdowns of a permanent nature.

At present the advantages of the so-called integrated operations of the major companies are not so great as some outsiders have contended. These advantages are to a large extent offset by conditions peculiar to small scale operations. For instance, in the Mid-Continent area there are a large number of independent refiners who have been able to operate their plants continuously for many years. While profits have not been large, their record in this regard has been at least as good as their major competitors. In many cases these refiners have been able to secure their crude oil supplies at a transportation cost of a few cents per barrel by building pipe lines, including gathering system to nearby fields. Being small their operations are flexible and can be readily adjusted to changes in manufacturing and marketing conditions. Overhead in manufacturing and sales is relatively low with most of these smaller organizations and the low investments have been of special advantage over the past three years when profits for the entire industry have been conspicuous by their absence.

It seems certain that the divorcement of interstate pipe lines and the lowering of tariffs would change this situation in which a large number of refineries are favorably located adjacent to the producing fields, not only in the main producing states of Texas, Oklahoma and California, but in many of the smaller states where local refineries furnish outlets for settled pools having a small daily production. The owners of many of these plants, due to the competitive conditions brought about by the lowering of the pipe line tariffs, would find it impossible to continue operations at their present locations.

The cost of dismantling a modern refinery and removing it to another location is practically the same as building a new plant so a removal to a new location along a major pipe line system would

mean the junking of present equipment and the financing of an entirely new project. In the past, smaller refiners have investigated the feasibility of removing their plants away from the fields to consuming points served by interstate pipe lines, and they usually have come to the conclusion that the possible profits did not justify the investments hazards. They have discovered that it is impossible to operate on a basis competitive with large refiners without making similar investments and financial support of this kind has always been difficult to obtain. This would be particularly true at this time.

Refinery operations at points long distance from the fields naturally lend themselves to large capital outlays. One company which has operated a refinery in the Mid-Continent for severals years found that all phases of its plant investment and operation would be increased if its present plant was shut down and removed to a new location. Whereas at present the securing of daily crude oil supplies from nearby fields is a relatively simple and inexpensive problem, a larger operation away from the field would necessitate many additional expenses. For example, with a plant located on a major pipe line system it would still be necessary to maintain gathering systems and storage facilities in the fields to accumulate the oil for tender to the pipe line systems. This oil would be delivered in large batches and not on a daily run basis, and this fact also necessitates large crude oil storage facilities at refineries. The refiners also must always be in a position to buy and store crude oil from constantly shifting sources of supply.

Important to Railroads

Some of the southwestern railroads and carriers in other parts of this country have sensed this proposal is of great importance not only to the independent refiners but also to all those who benefit from their operations. In the case of the southwestern railroads the movement of refinery products from approximately 150 independent refineries is the second largest source of revenue, being exceeded only by the transportation of agricultural products. As the largest industrial enterprise of the Southwest these refineries furnish regular employment for thousands of employes and are the main industrial activity and source of tax revenue in many communities.

Divorce Detriment to Everybody Instead of Benefit to Anybody

By JOHN O'DONNELL
Editor, The Oil City Derrick, Oil City, Pa.

OIL CITY, Pa., Apr. 11.—Legislation to sever pipe lines from oil companies would not only be difficult of enactment but ineffectual as a remedy. A Federal law would apply only to interstate traffic and not to lines whose business is confined to states. This would only mean confusion worse confounded. The special nature of the oil industry renders most pipe lines necessary to the success of the whole. It would be as logical to say that producers could not be refiners.

In the eastern fields there are a dozen companies whose gathering lines are as necessary to their operations as their wells. To constitute these a separate entity with outside ownership would be absurd.

The abuses alleged against anthracite mining companies when their railroads were divorced do not apply to oil, and anyhow that splitup benefited neither the industry nor the public.

In the matter of pipe lines the proposal would prove to be a detriment to everybody instead of a benefit to anybody.

In our opinion Washington is paying too much heed to the disturbing elements in the oil industry and not nearly enough to the major problem of conserving an irreplaceable mineral of immense value to the nation in time of peace or war.

No Benefit to Little Producer

The following telegram has been sent to Secretary of the Interior Ickes by W. W. Warner, an independent oil producer of Nowata, Okla.: "My attention has been called to a bill introduced in the House by Representative Disney of Tulsa divorcing oil pipe line companies from affiliated refinery interests. Can see no possible benefit to stripper well owners and great possible damage to their interests. Am afraid we will be first ones to lose pipe line connections if this move is made, as it costs more to collect oil from stripper wells than from wells in flush fields. Think any disruption of oil marketing industry inadvisable at this time. Over 50,000 wells in Oklahoma are in stripper class. Would like to be heard on subject if possible. Message comes from me as individual, not as president of Oklahoma Stripper Well Association. Believe all stripper well owners would feel same if advised of facts."

What Would Happen if Pipe Lines Were Divorced? Who Would Buy and Operate Separate Units?

Suppose the pipe lines were divorced, what would be the result? How would it be effected?

The integrated companies might divest themselves of their pipe line ownership by turning over pipe line shares to their stockholders. But would that satisfy the critics any more than the similar procedure in the anthracite cases which led Professor Ripley to remark that the application of the commodities clause to the railroads as interpreted by the courts did not seem to exclude but rather to invite intercorporate stock holdings?

Presumably nothing short of an actual sale of the pipe line properties would meet the views of the proponents of segregation. But who would buy them? Where would the necessary billion dollars come from?

Consider how it would appeal to investors. Here is a vast network of pipe lines constructed by integrated oil companies for the sole purpose of transporting crude oil from the fields to the refineries. It is good for no other purpose.

The new owners will have neither oil production nor refining facilities to make use of these pipe lines. They will be limited to transporting such oil as may be offered in an industry subject to the most violet fluctuations of demand and supply and of changing supply.

Discovery of a new field may require instant extensions at great expense and at the same time reduce the volume of traffic on existing lines. There is no assurance of permanence of traffic or even of continued growth.

Being obliged to rely upon profits from transporting oil, the new owners must take all these exceptional risks into calculation and seek corresponding returns for their service.

The former owners, the integrated oil companies, being familiar with the oil industry, had the advantage of experience and knowledge in operating and constructing their pipe lines.

The new owners would be subject to the same regulation as to rates by the Interstate Commerce Commission. They would have to meet the same competition among themselves unless they were able to merge into fewer companies with increased debt charges offsetting economy from consolidation.

It is difficult to see how the change would in any manner benefit the individual producer or refiner, while there is every indication that it would work to his disadvantage.

If the pipe lines became a mere transportation agency where would the oil market be made? Would the producer continue to find his market in the field? Would the refiner have the same assurance of continuous supply when it was beyond his control?

Would oil have to be shipped like cattle to a market to take its chance of being sold at whatever the market of the day might bring? Would that benefit the producer?

Last week there were hundreds of cars of crude oil reported on sidetracks along the Gulf Coast awaiting disposal and there were reports of some being held for freight charges. How would that condition help the oil producer?

Whatever profits the divorced pipe lines might make would be lost to the oil industry whose earnings and resources would be correspondingly reduced. Can any oil man be benefited by weakening the industry?

Pipe Line Necessary Part of Refining Branch of Industry

The dissolution of the Standard Oil Co. in 1911 led to the first segregation of pipe lines from their integrated companies.

The eastern system was broken up into a dozen companies, including the Buckeye Pipe Line Co., Indiana Pipe Line Co., National Transit Co., New York Transit Co., Northern Pipe Line Co., Southwest Pennsylvania Pipe Lines, Southern Pipe Line Co., Cumberland Pipe Line Co., Eureka Pipe Line Co. and others.

Although functioning as separate units since, their traffic has been affected by increasing shipments by tanker to eastern ports, first from Mexico, then from California, the Gulf Coast and Venezuela, which reduced the pipe line movement from the Mid-Continent. Two of the eastern pipe lines have been sold to gas companies, others have been transferred to gasoline, while some have gone out of business. Instead of crude being shipped to the East Coast we now have crude and gasoline being shipped inland.

The western Standard Oil pipe lines were attached to the Prairie Oil & Gas Co. and the Ohio Oil Co., two producing organizations without refining facilities. In 1915 these two lines were established as separate companies, the Prairie Pipe Line Co. and the Illinois Pipe Line Co., following the decision of the U. S. Supreme Court holding interstate pipe lines to be common carriers.

The independent pipe line company, without a refining outlet, has, however, tended to disappear. The Illinois Pipe Line Co. was acquired by the Ohio Oil Co. when it entered the refining business. The Prairie Pipe Line Co. and the Prairie Oil & Gas Co. were merged with the Consolidated Oil Corp. It is interesting to note that these two pipe lines, first integrated, then independent, finally returned to integration.

All experience indicates the necessary complementary relationship between pipe lines and refineries. Limited to connection with producing companies or as separate units, they have fared unsatisfactorily.

As for pipe lines constructed by persons outside the oil business the one outstanding instance is sufficient. The Crusader Pipe Line Co. was organized in 1925 as a transportation line from the Smackover Field in Arkansas to Vidalia on the Mississippi River. It never carried a barrel of oil and a portion of it was sold to a gas company.

Public's Interest in Pipe Lines Satisfied in Service and Cost

The public's interest in pipe lines is limited to two points—service and cost. Service to the public is established by the fact that there is never a shortage of gasoline at the filling station.

The fact that the pipe lines have not been collecting exorbitant rates is established by the price of gasoline at the same service stations.

Gasoline was the cheapest of all commodities before the war, during the war, during the period of peak and freak prices ending in 1929, and, of course, since.

This year it reached an all-time low at refineries. The average motorist is paying from one-third to one-half what he spends for gasoline to the tax collector. Yet even with that heavy impost added to the cost from the well, through the pipe lines, the refineries and the filling station, the price of gasoline is scraping bottom.

Which, of course, could not be true were the pipe lines making an exorbitant profit.

The depletion of pools sometimes exceeds all calculations and if the pipe line has not been able to pay for itself before the end comes it is just too bad.

The traffic of the largest trunk line in the country was cut in half by the flood of cheap oil from California in 1923. Consider the effect of East Texas on Oklahoma City, on the rest of Texas, on Kansas. And everyone heard the wails from East Texas when Conroe seemed a coming menace.

Owners of 250,000 One-Bbl. Wells Endangered by Threat to Change Status of Pipe Lines

By JAMES McINTYRE

Who would be benefited by a law divorcing the oil pipe lines engaged in interstate commerce from other branches of the industry? Would divorcement benefit the 20,000 or more operating companies, firms and individuals engaged in the production of oil in the United States? Would it benefit the thousands and thousands of farmers from whose land the oil is taken? Would it help the thousands of pumpers and other lease workers now drawing wages, and in many cases given free rent and fuel and land for a garden?

It would be hard to convince any thoughtful oil producer that the proposed law would benefit his class of oil men in any way whatsoever, but it would be easy to demonstrate where such a law would be a menace to that large majority of operators whose production may be measured in gallons rather than barrels per day.

In every movement for the betterment of the oil industry attention is called to the fact that nearly all the wells in the United States east of California are small oil producers. There are 210,000 oil wells in Kansas, Oklahoma, New York, Pennsylvania, Ohio, West Virginia, Indiana, Illinois and Kentucky which produce only 122,000 bbls. per day or a little more than half a barrel each.

They don't average 100 quarts of crude oil per well per day. Some of them don't average 50 pints of oil per day and when we begin to measure the crude oil production of a well by quarts and pints that well is getting down to very small pickings, especially at the average price received for oil at present.

There are tens of thousands of wells that don't average a quarter of a barrel per day. The daily milk production of a good Holstein cow exceeds the daily crude oil production of many wells in the old fields in the eighth-of-a-barrel class. There are a quarter of a million wells the combined production of which will not average 1 bbl. per well per day.

The owners of this class of wells who have no refineries of their own, and only a scant few of them own refineries, have no other market for their oil than that supplied by the refiners who own the pipe lines connected to the wells. The producer, in all the 73 years of the oil business, never had any other regular customers than the refiners, who in the early days of the oil business collected the oil in barrels and shipped it down the Allegheny River to some railroad point or conveyed it to nearby Pennsylvania refineries in horse-drawn wagons.

Important Forward Step

The pipe lines built by the same interests that owned the early refineries, marked an important step in the progress of the producer. He welcomed them. They gave him a more convenient way of handling his product. By an improved system of measuring tanks, put into use by the pipe lines, the buyer gave the producer an honest accounting of the quantity of oil run from the wells. Wherever a well was completed the pipe lines extended their main lines, or laterals and gathering lines, to give the producer quick service. In the progress of the years, as one state after another saw the development of crude petroleum within its borders, the purchasers of oil extended their pipe lines until they reached from western Texas and New Mexico all the way eastward to the Atlantic Seaboard, or southerly to the Gulf Coast.

The producer as a class never had any fight with the pipe line. The oil producer was in a unique position. He was the only basic producer who did not have to seek a market. The buyers came to him, and in many instances advanced money to hard-pressed producers and took their pay in oil when produced.

Whoever it is that wants a change in the status of the pipe line, it is certainly not the producer of oil. The owners of the 250,000 one-barrel wells in the fields east of California (and all the 1-bbl. fields are east of California), now have a market for their oil. They are only prevented from having a better price by the fact that some flush fields are not only overproducing but that a large proportion of the oil from the big fields is being sold far under the regular posted price of the larger companies in the field.

If the pipe lines are divorced from the producing and refining branches of the industry the small producers fear that they will be the first to suffer. The pipe line company does not charge any more per barrel for gathering the oil from a quarter-barrel well than from a 10,000-bbl. well. The pipe line company makes a real profit running oil from big wells but it makes little, if anything, taking the oil from an old field of a multitude of small wells. It continues to function in the old areas because it is serving old customers with whom it has had friendly relations for years and whose production as a whole is well worth gathering as long as it can be done at no loss. So it goes on year after year taking the oil from wells producing from 5 or 6 gallons up to a barrel per day, and delivering it to its refinery connection. It could get along without this oil as long as there are flush fields, but the refiner knows that a flush field this year will be a stripper field a few years hence, and that no well should be left unserved as long as the owner continues to operate it.

If the pipe lines are divorced from the rest of

No Comparison Between Railroads and Pipe Lines; Furnish More Service and Take More Risks

There is no comparison between the railroads and the pipe lines. They are wholly different forms of transportation. The railroads depend upon the public at large for their business, both passenger and freight. They were constructed with the sole aim of making a profit from transportation.

The pipe lines were laid for one particular purpose, to serve one single need, the transportation of the raw material to the manufacturers of petroleum products, like a logging railroad between the timber and the saw mill, or like one of those endless conveyors in a mass production automobile plant.

The railroads carry everything, from coal to watchsprings. All commodities are grist to their mill. They are usually assured of a return haul, as in the Pittsburgh region coal to the Lakes and iron ore to the mills, or agricultural products to the industrial East and manufactured products to the agrarian West.

The pipe lines handle but one commodity and but one way.

The railroads are built to develop or profit from the continuous growth of a section or community with every assurance of permanent business.

The pipe lines, under stress of the keenest competition, are built to potential sources of traffic which may or may not repay the cost of construction and whose duration is uncertain.

The expected volume of oil may not be found or the discovery of a more accessible or desirable field may eliminate the market for that line's crude.

The railroads can themselves create business. Their tapping one community may make it a future city; their passing by another may wipe it off the map.

Cannot Create Business

The pipe lines can handle only what the producers of oil and the refiners who take that oil can offer for transportation. If there is a scarcity of oil the pipe line suffers. If there is too much oil and production has to be curtailed the pipe line suffers.

The pipe line can not help itself. Its business fluctuates not only with the ebb and flow of general business but with all the shifts and changes in both the production of oil and the marketing of its products.

Unlike the railroad it cannot turn to any other source of traffic. It owes its origin and its continued existence to the industry which created it and which alone offers use for it.

The vital problem for the early refiners was an assured supply of crude. Next, that it should be secured at the lowest cost. Shipment from the wells by team and barge was followed by rail shipment at a high cost. The pipe line offered the solution of economy and efficiency.

Refining organizations anxious to be provided with a continuous supply of their raw material gladly furnished the capital needed and the reductions in cost more than justified the investment.

As the demand for oil grew the refineries were located nearest to the market for their products and the extension of the pipe lines from the fields to the refineries offered a double economy, saving freight cost on the raw material and on the finished product.

Market Made in Field

As a result of this development the market for crude oil remained in the field where it was produced. Demand met supply at the end of the pipe line. So natural and convenient and economical did this method prove that it soon became a general practice throughout the industry, following it wherever oil was found.

When new fields were opened pipe lines were quickly extended to them, sometimes with expensive results. Competition in this branch of the industry as in all others frequently overdid itself with consequent excess in facilities. On the other hand, there has been no complaint of lack of facilities in any area where outlets were needed. Such complaints as have been made have been due to lack of demand for oil rather than means of transporting it.

Besides furnishing a market for oil on the spot the pipe lines provide gathering lines to collect it for the trunk line and gauge and test the receipts. These gathering systems are provided at the cost of the pipe lines, although they are temporary and abandoned when the oil is depleted.

The railroads, it may be remarked, furnish no such service to their shippers who must deliver his consignment to the tracks or pay his share of the cost of a spur track.

Nor do the railroads furnish a market for their shippers, such as the pipe lines do. This is because the railroads are solely a transportation agency whereas the pipe lines are a plant agency representing the demand for oil by the refinery of which the pipe line is an integral part.

There is probably no more general misunderstanding in the oil business than the assumption that the transporting line is responsible for fluctuations in demand which really originate in the needs of the refining organization. It is not how much oil shall be transported but how much oil is needed at the delivery end of the line. If this were more generally understood there would be less unthinking criticism.

the industry, and their present owners, who are also producing and refining companies, lose their right to direct pipe line policy; if the pipe lines are to be subjected more than ever to the will of the Interstate Commerce Commission, and pipe line tariffs and gathering charges reduced, the small producer feels that he will be the first to suffer the ill effects of the change. If rates are cut, and that seems to be one of the objectives of the proponents of divorced pipe lines, the pipe line will of necessity favor the fields of larger production. The crude oil buyer could not be expected to gather oil from small oil wells at a loss to itself. If it can get all the oil its lines can hold from flush and semiflush fields it may mean a withdrawal from very old fields which it now serves, and that will mean the abandonment of millions of dollars of now valuable oil property with anywhere from 10 to 50 years life left in it.

Predominance of Small Wells

It may be interesting to those officials in Washington favoring the divorcement of pipe lines to get some detailed figures on the capacity of oil wells to produce. It is generally known that in the old fields east of the Mississippi River the wells average less than half a barrel per well per day. They can get proof of this by consulting the Bureau of Mines. We will take Oklahoma, one of the newer and one of the largest of producing states to make an exhibit. A few months ago in an article dealing with proration in the State the writer presented a table showing the number of wells in Oklahoma producing from a fraction of a barrel per day up to 200 bbls. per day or more. The result was as follows:

Class of wells—	No. of wells	Aver. prod. per well per day (bbls.)
Below 1 bbl.	20,078	.68
1 bbl.	7,435	1.26
2 bbls.	9,281	2.27
3 bbls.	2,867	3.16
4 bbls.	602	4.53
5 bbls.	5,170	5.89
6 bbls.	1,684	6.15
7 bbls.	3,970	7.28
8 bbls.	1,213	8.61
9 bbls.	1,063	9.67
10 to 14.99 bbls.	1,041	13.53
15 to 19.99 bbls.	983	16.93
20 to 24.99 bbls.	492	24.53
25 to 29.99 bbls.	97	26.05
30 to 34.99 bbls.	491	30.32
35 to 39.99 bbls.	15	37.00
40 to 44.99 bbls.	557	42.74
45 to 49.99 bbls.	36	45.06
50 to 59.99 bbls.	656	54.17
60 to 74.99 bbls.	691	68.31
75 to 99.99 bbls.	335	82.17
100 to 199.99 bbls.	266	199.80
200 bbls. and over	784	229.62

With the exception of the wells in the higher production brackets there is little change in the status of wells since the above was written. There were 59,807 wells in Oklahoma producing at that time, making 554,676 bbls. per day or an average of 9.27 bbls. per well for the whole State. There are about the same number of wells now, the abandoned old oil wells having balanced the new wells, and the production per well averaged in March about 7.17 bbls. per day per well for the State.

There are more than 55,000 wells in Oklahoma the combined production of which will not average over 3.5 bbls. per day per well, and over 30,000 wells the combined production of which will not average over 1 bbl. per day.

Mostly on Indian Land

Most of these small wells are located on Indian lands, in the Cherokee, Osage and Creek Nations. The wards of Uncle Sam, like the owners of the old stripper wells may well wonder what is to become of their oil income when the divorced pipe lines find that it no longer pays to gather their oil.

The pumpers, most of whom have grown old in service, and who would be thrown onto the world in a time of general depression may wonder what is to become of them and their wives and children. Pipe line gaugers and pump station employes would be sacrificed. The loss of oil income to such cities as Nowata, Chelsea, Muskogee, Bartlesville and Pawhuska in Oklahoma, and to the principal towns in eastern Kansas, where the small stripper well conditions prevail as in Oklahoma, would be a severe civic blow.

The stripper well owner has fought many a battle against low crude oil prices in time of flush production in other fields, and against exorbitant taxes, and has managed to keep afloat. But if his market is taken away from him, he has lost everything. It would be a crime to put this splendid class of citizens out of business.

No Flush Fields in Eastern Area

The purchasers and transporters of oil produced east of the Mississippi River have no flush fields to take the place of the old fields, with the one minor exception of the Mount Pleasant area in central Michigan. The 14,900 wells in the State of New York averaged in February 8,570 bbls. per day or an average of 0.59 bbl. per well; Pennsylvania, 79,871 wells, averaged 32,214 bbls. per day or 0.40 bbl. per well; Ohio, 36,850 wells, averaged 11,360 bbls. per day or 0.31 bbl. per well; West Virginia, 14,900 wells, averaged 9,357 bbls. per day or 0.63 bbl. per well; Kentucky, 15,300 wells, averaged 12,000 bbls. or 0.71 bbl. per well; Indiana, 2,490 wells, averaged 1,570 bbls. per day or 0.63 bbl. per well; Illinois, 14,900 wells, averaged 9,400 bbls. per day or an average of 0.64 bbl. per well. In the seven states a total of 178,811 wells produced in February an average of 84,508 bbls. per day or an average of 0.47 bbl. per day per well. The vast area has been subject to the drill for 70 years and its possibilities as to pools thoroughly explored as deep as oil has ever been known to exist in that part of the United States.

No Big Profits in Stripper Areas

No one can accuse the eastern pipe lines of making superprofits from the gathering and shipping of petroleum from the 178,811 oil wells in that part of the country where the wells averaged less than a half barrel per day.

The principal source of income of some of the eastern lines comes from shipments of Mid-Continent crude oil on its way to the Atlantic Seaboard or Appalachian district refineries. This oil is delivered to the eastern lines at the Mississippi River or Chicago and transported easterly as far as the pipe line goes and is then again transferred to a more easterly pipe line and shipped to its destination.

The oil fields in Texas, Arkansas, Louisiana and in the Rocky Mountain States are not old enough to have got down to the fractional barrel per well stage, but most of the pools in all four of these areas are on the way to that stage. With the exception of the East Texas, Van, Conroe and Yates Pools in Texas the other Texas pools and fields have reached the pumping stage which puts them into the category of stripper wells.

All the fields in North Louisiana and Arkansas are in the pumping well class, but Arkansas can claim an average of 10 bbls. per well per day and Louisiana, including the coastal pools, is producing 20 bbls. per well per day, the high average being attributable to the new coastal pools.

The producers that lie under a threat of extinction at this time are that vast majority of veteran operators whose production is in the older fields from New York to Oklahoma, inclusive. These men can see no good that can come out of divorcing the pipe lines, but they can see where such legislation, and its accompanying restrictions, may work out disastrously to their most important, if not their only, source of income.

Constituents Against Bill

Constituents of Congressman Wesley E. Disney of the first district of Oklahoma are up in arms against the proposal to divorce interstate pipe lines from other branches of the petroleum industry, as contained in a bill introduced into the House of Representatives by Mr. Disney. The section represented by Mr. Disney includes the stripper well area of northeastern Oklahoma and the owners of thousands of wells in that territory realize their pipe line connections would be severed and they would lose their markets for their oil if the proposal to divorce pipe lines is enacted into law. Telegrams have been sent to Mr. Disney protesting against the bill and it looks as if his political fences are badly in need of repair.

Divorce of Railroads and Coal Wholly Different Proposition

The proposal to divorce pipe lines from the companies they serve is not new. They were made common carriers by the Hepburn act of 1906 which placed them under the jurisdiction of the Interstate Commerce Commission, requiring reasonable and nondiscriminatory rates and the filing of rates with the commission.

Following that enactment and its being sustained by the courts most integrated companies established separate corporations for their transportation divisions formerly operated as subsidiary departments. This was chiefly to simplify accounting and reports to the commission.

Since then pipe line tariffs have been filed with the Interstate Commerce Commission and in general accepted as reasonable and nondiscriminatory. A regulation requiring tenders of not less than 100,000 bbls. was subsequently reduced to minimum tenders of 10,000 bbls.

When the commodities clause was embodied in the act of Congress of 1906 making it unlawful for a railroad company to transport any commodity in which it had an interest there was some agitation to make it apply to pipe line companies, and forcing a separation of pipe line systems from integrated companies.

The commodities clause as applied to the anthracite coal railroads owning mines was formulated in the thought that railroads should not engage in any other business than transportation because of the temptation to discriminate against other shippers in the same line of business.

The anthracite fields of Pennsylvania offered all the conditions for a monopoly—a narrowly limited supply and adjacent markets. Railroad dominance added was deemed a public danger.

No such conditions are found in the oil industry. Oil is found in widely scattered sections, often in remote areas, and subject at all times to upsetting new discoveries.

The public interest, which demanded the separation of the anthracite roads from their mining properties, is in no wise involved in the pipe lines serving the oil industry.

Elliott's Proposal Direct Blow at Small Independent Producer

The Wiser Oil Co. of Bartlesville, Okla., which owns and operates 1,780 producing wells averaging three-fourths barrel per day in Osage, Creek, Washington, Nowata and Rogers Counties in Oklahoma and Chautauqua and Montgomery Counties in Kansas, has sent the following telegram to Harold L. Ickes, Secretary of the Interior:

"We are quite fearful the enactment of a law separating pipe lines from other branches of the oil industry may prove disastrous to producers of old settled production. The stripper class of production is much more expensive for the pipe line to gather than oil from flush or semiflush fields and during periods of surplus available supply of crude oil our pipe lines probably would disconnect from stripper fields or discontinue taking from them were they not linked with refining and marketing. Integrated companies can well afford to and are buying output of stripper wells to maintain friendly outlet for their refined products, and to avoid the necessity of producers skimming their own oil which would result in further demoralization of the gasoline market. We regard the movement to divorce pipe lines from other branches of the industry as a direct blow at small independent producers, particularly in stripper fields, and as a producer of stripper wells not having pipe lines or refineries we protest against it and urge you to oppose it."

Shall the Minority Rule?

It should interest oil men throughout the United States to know that the group which urged President Roosevelt to divorce interstate pipe lines from other branches of the oil business are said to have represented only 57 producers of the country, whereas the associations subscribing to the report of the Committee of 15, which report was opposed by the aforementioned group, are reported to have represented 20,518 producers.

Devastating Possibilities in Pipe Line Proposal in Its Effects on Oil Bonds and Stockholdings

Nearly 2,000,000 people are shareholders in the 20 leading oil companies in the country. This vast number of investors is vitally concerned over the proposal of the new administration to divorce oil pipe lines from other branches of the oil industry. They are, in fact, the owners of the companies and it is they, in the final analysis, who would suffer from the enactment of the proposed adverse legislation. To impair the earning power of the oil companies by divorcement not only affects these 2,000,000 people directly, but the decline of their interest and dividends, and possible cessation of same, has a far-reaching adverse effect in the rehabilitation of business and the circulation of wealth so badly needed in this dark hour. And bear in mind these 2,000,000 people represent the shareholders in but 20 oil companies. There is an untold number whose investments in lesser corporations, partnerships and individual enterprises would be jeopardized by the passage of this insidious measure. The Oil and Gas Journal has in its records a list of over 6,200 active oil producing and pipe line companies, each of which possesses a large number of stockholders. It has been calculated in the past that upwards of 5,000,000 people in this country have investments in some measure in the business of petroleum.

Question of Indebtedness

Let us take the case of funded indebtedness. The first, or senior, obligation of many of the integrated companies is a bond issue which is secured by the entire physical assets of the company. It is in reality a first mortgage. These bondholders were given to understand at the time of purchase that they were protected by the complete holdings of the company. They considered the whole structure when making the investment. Now it is proposed to remove part of their security through the divorcement of the pipe line interests of the company. Obviously this can not be done without properly compensating the investor. Since this type of security carries a future maturity date, the sinking funds of the companies are in no position to retire the issues. Neither could the bondholders in justice to themselves release the pipe line holdings from the original security. A financing complication arises which is evidently without solution.

The Case of Stockholders

In the case of stockholders, both preferred and common, the injustice is equally severe. Should they be forced, through Federal legislation, to accept a stock splitup in proportion to the property separation of the original company, the new holdings will not represent the sound equity of the original investment. Since the purpose of the agitation apparently is to weaken the integrated companies, the stockholders are unfairly placed in an indefensible position with regard to their investment. Suppose, for example, an owner of five shares of preferred stock is compelled to accept four shares of the new issue in the original company and one share in the divorced pipe line company, which will be a separate corporation. The value of his new holdings, it is generally conceded, would be considerably less than his original five-share investment, for, under the new setup, the parent company would be weakened far beyond the 20 per cent allowance made for the divorcement, although he is forced to retain 80 per cent of his investment therein. And at the same time his one-share investment in the pipe line company is in a new corporate structure, the financially successful operation of which is doubtful and uncertain, especially in view of the movement for lower rates for transportation of oil. This agitation to reduce rates will follow just as night follows day once the affairs of the oil industry get into the hands of those who have no knowledge or experience in this vital and highly complicated industry.

These figures are cited merely for illustration. However, they bring up the timely and important question of how and by whom are the properties of the integrated companies to be appraised in order that the accurate value of their pipe line properties be determined? It is obviously necessary that the entire holdings of these companies, producing properties, refineries, natural gasoline plants, and marketing facilities, as well as pipe line properties must be appraised in order to obtain the relative value of the pipe line holdings. The work, expense and difficulties of such a task, at the hands of the Federal Government are only too evident. And in the end, who is to benefit?

Certain it is that the market value of oil securities will droop if the administration pursues its announced course. The hand of government cannot sever the important arm of transportation from the company body without the shock being transmitted to the sensitive nerve centers of finance. In view of the extremely depressed condition of security values, is it not a fatal mistake to take action which will further shrink the present values of the securities of a vital industry? The New York bond market today furnishes sad testimony of the plight of the railroads, an industry which has been regulated by the Government to the point of strangulation. What could be more eloquent than the present quotations of former high-grade railroad bonds whose companies have had to struggle through recent years under the oppressing hand of Federal rate-making agencies and trade-regulatory bodies? The oil industry can not hope to avoid a similar experience if individual and corporate enterprise is to be restricted by law.

The oil investor, probably 5,000,000 strong, is deeply concerned over the divorcement proposal. He can sense the detrimental result of the contemplated action upon his investments. He understands that the smooth flow of company operation, from production to the gasoline tank, can not be interrupted successfully. He can see a further price recession of his holdings from their present panic levels. No wonder, then, that he is aroused and nervous, for he can distinguish not a single redeeming feature in the proposal, but views the measure as benefiting no one and doing harm to all.

Over Billion Dollars Have Been Invested by Industry in Lines

The importance of the pipe lines to the oil industry may be measured by the fact that the aggregate investment in them in 1931 was $845,049,923. It is today well over a billion dollars.

The funded debt of the pipe line system is only a little more than $100,000,000. Contrast that with the railroad financial structure.

There are approximately now 115,000 miles of pipe lines reaching American oil fields—more than one-third of the mileage of all the important railroads.

These systems include much more than a mere line of pipe: power plants, pumping stations, communication lines, working tanks and a mass of equipment necessary to their operation. The pumping stations are at intervals of 15 to 40 miles.

There are some 40 separate companies engaged in interstate transportation—about 80 per cent. There are also many intrastate lines, in California and Texas particularly.

Alfred E. Smith Sees No Advantage in Extending Regulatory Control Over the Pipe Lines

The National Transportation Committee, of which Calvin Coolidge was chairman, conducted a thorough inquiry into all phases of transportation, upon invitation of business associations, savings banks, insurance companies and fiduciary and philanthropic institutions interested in railroad securities.

ALFRED E. SMITH

The members of the committee, in addition to Mr. Coolidge, were former Governor Alfred E. Smith, Bernard M. Baruch, Clark Howell and Alexander Legge.

Under the heading of pipe lines the report says:

"The committee has no recommendations to make on pipe lines.

"There are projects for a wider use of pipe lines as a transportation agency but at present they do not constitute a problem. They are not subsidized and they are effectively regulated.

"The subject has been ably and exhaustively studied by the House Committee on Commerce in a forthcoming report. (Reported in The Oil and Gas Journal of March 9, 1933, and in this issue.)

"From our own studies we do not recommend further present affirmative action."

In a supplemental report signed by Alfred E. Smith, he says:

"While I am in substantial agreement with the greater part of the committee's report, this supplementary memorandum states my conclusions in my own language, placing the emphasis where I think it belongs.

"As to the subject of competition by air, water, pipe and highway lines, I believe that the effect of competition of these lines upon the railroads has been exaggerated.

"Drastic regulation of competing services is not the solution of the railroad problem, and such regulation should be established only in the general public interests. Regulation is expensive. It is bureaucratic. Once established it expands, and it paralyzes private initiative without offering constructive leadership.

"The pipe lines are built. They serve a very limited purpose. They present no serious menace to the railroads.

"I see no advantage in extending regulatory control over them."

Investigation by the House Interstate Committee Found No Reason for Divorcing Pipe Lines

By CHARLES E. KERN
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Apr. 10.—It is now certain that as soon as the report on pipe lines made by the House Committee on Interstate and Foreign Commerce in response to Resolution 59 of the first session of the last Congress comes from the press the two volumes of the exhaustive study of this question will be sent to President Roosevelt for his information.

The subject of pipe lines was not before the Committee of Fifteen that made recommendations to Secretary Ickes for dealing with the oil industry so that the recommendation of John B. Elliott, president of the Independent Petroleum Producers Opposed to Monopoly, and former manager of the Senatorial Campaign of Senator McAdoo, came before the oil industry like a bolt from a clear sky.

The Committee on Interstate and Foreign Commerce having reported against the divorcement of pipe lines from oil companies that had created them for their own use as a part of their integrated producing and refining equipment, it was supposed that that report was conclusive on that subject, and it was not mentioned in the conferences between the Committee of Fifteen and Secretary Ickes.

Placing the interstate pipe lines under the Interstate Commerce Commission and the lowering of the minimum offering of shipments allowed by the commission was regarded as a settlement of the controversy that had long existed on the part of independents who contended that they should be allowed the right to ship on the interstate pipe lines on an equality with those who had created this form of transportation as a part of their integrated industries.

Use by Outsiders

The use of pipe lines by outside shippers forms an interesting chapter of the report of the House Committee on Interstate and Foreign Commerce.

"The Hepburn Act of 1906," the report says, "made persons or corporations engaged in the interstate transportation by pipe line of oil or other commodities except water and gas, common carriers subject to the jurisdiction of the Interstate Commerce Commission. This step was taken to lessen the influence then exerted over the oil industry by the Standard Oil Co. through its extensive control of pipe line facilities. As administered by the Interstate Commerce Commission and construed by the U. S. Supreme Court, the act was made to apply to all companies except those carrying only oil of their own production, even though title to the oil had passed from the producer by sale before it was tendered for pipe line movement.

"Included in each of the pipe line reports is a section entitled 'Common Carrier Status of the Pipe Line Operations.' The information contained in this section is intended to draw attention to some of the essential facts relative to the public use of pipe lines at the present time. As bearing on this matter, the number of 'outside' customers served by either gathering or trunk lines and the ratio of their business in terms of volume and revenue, to the total business done by each company, are developed for the year 1931 or the three years, 1929 to 1931."

Movement of Outside Crude Oil Through Interstate Pipe Lines

The evidence which has been obtained by the committee as to proportions of the oil or gasoline moved by individual pipe lines in 1931 that represented "outside" shipments, as contrasted with oil or refined products purchased or produced by companies within an associated group who tender it to the pipe line members of the group for shipment, is summarized in three groups.

Group 1 consists of subsidiaries of large or medium-sized integrated units of the oil industry, having a total of 59 gathering lines and 60 trunk lines.

Group 2 consists of subsidiaries or partially integrated or smaller integrated units of the oil industry with 14 gathering lines and 5 trunk lines.

Group 3 consists of "Independent Pipe Lines" with a total of 9 gathering lines and 9 trunk lines.

Referring to these groups the committee's report states:

"It will be noted that over 60 per cent of the companies in Group 1 reported that in 1931 they carried no outside oil in their gathering lines and that about 50 per cent of such companies made a similar report on the use of their pipe lines. Only 5.1 per cent of the gathering lines were reported to have carried in excess of 50 per cent of outside oil and only 10 per cent of the trunk lines. Passing over the intermediate group of companies to the third, a marked contrast is to be noted. As required by the circumstances of their operations, nearly all of the important lines in this group report a 100 per cent movement of 'outside' oil.

"Also of interest is the number of outside customers served. In the case of the gathering lines, the number in 1931 ranged from 1 to 11,813.

Trunk Line Customers

"Outside trunk line customers numbered 1 or 2 in the case of 10 companies and ranged from 3 to 10 in the case of 15 companies. The remaining cases are as follows: Indiana Pipe Line, 16; National Transit, 20; Gulf Pipe Line Co. of Oklahoma, and Gulf Pipe Line Co. of Pennsylvania, 23 each; Texas Pipe Line Co., 29; Gulf Pipe Line, 32; Pure Oil Pipe Line Co. of Texas, 36; and Buckeye Pipe Line Co., 63. While only three of these eight companies are members of the independent group, in each of the three cases all oil carried was outside oil, while the percentage of outside oil carried by the five remaining companies ranged from 5.1 to 100 per cent.

The foregoing summary of the number of outside customers indicates that in the main the oil carried in gathering lines passes into relatively few hands before it is tendered to such lines and that there is further concentration of ownership of the oil when it is ready for trunk line movement. Outside shippers are therefore generally large shippers, representing other units of integrated or partially integrated oil groups. Illustration is provided by the details in the report on Standard Oil Co. (New Jersey corporation).

Reports on Companies

A few of the more striking instances in which pipe line members of a large unit were used in 1931 by outsiders may be mentioned:

Empire Pipe Line Co. (Cities Service) reports 6 outside customers for its trunk lines, whose oil represented 20.8 per cent of all oil carried.

Pierce Pipe Line, a member of Consolidated Oil group, reports that 94 per cent of the oil moved in its trunk lines in 1931 was the property of Magnolia Petroleum Co., a Socony-Vacuum subsidiary.

Prairie Pipe Line, now a member of Consolidated Oil Corp. group, in 1931 carried no oil except for outsiders, though included in its customers were Prairie Oil & Gas Co., and Producers & Refiners Corp., companies with which there was a community of interest.

The pipe line subsidiaries of Gulf Oil Corp. of Pennsylvania, while serving numerous customers, carried only from 5.1 to 12 per cent of outside oil.

Illinois Pipe Line Co., a subsidiary of Ohio Oil Co., had 5 outside trunk line customers in 1931, whose oil constituted 87.5 per cent of the total carried.

Phillips Pipe Line Co., a newly constructed gasoline line, had one outside customer, whose shipments constituted 17.8 per cent of the total volume moved by the line in 1931.

Oklahoma Pipe Line Co., an indirect subsidiary of Standard Oil Co. (New Jersey), reports that 55 per cent of the oil carried in its trunk lines in 1931 was outside oil.

Tuscarora Oil Co., Ltd., another Standard Oil (New Jersey) subsidiary, carried 52.3 per cent of outside oil in its trunk lines in 1931; Prairie Oil & Gas Co. was a large consignor, shipping to Atlantic Refining Co., Pure Oil Co., and Carbide & Carbon Chemical Corp.; other outside consignors were Pure Oil Co. and South Penn Oil Co.

Various of the pipe line subsidiaries of The Texas Corporation, including jointly owned companies, carried large amounts of outside oil in 1931; that carried by the newly constructed Texas-Empire Pipe Line Co., constituted 42.3 per cent of the total carried.

Tide Water Pipe Co., Ltd., carried 23.6 per cent of outside oil for two customers in 1931. Union Oil Co. of California and its subsidiary, Producers Transportation Co., in 1931 carried oil for eight outside customers, which oil constituted 18.2 per cent of the total, while Producers in that year carried 28.2 per cent of outside gasoline; neither company files tariffs with the California Railroad Commission, the rates charged being "such as (are) agreed upon from time to time."

Two of the smaller pipe lines, American Petroleum Co., and Atlas Pipe Line Co., Inc., respectively carried 51.1 and 42 per cent of outside oil in 1931.

The use made of the "independent" pipe lines has already been indicated.

Merely Plant Facilities

Various considerations are advanced in explanation of the numerous instances in which pipe lines—37 gathering and 31 trunk—are used solely by the owning or affiliated interests. These considerations may be summarized as follows:

1. In many cases the lines are stated to be merely plant facilities used in bringing oil to refineries of the same company or of affiliated companies, generally over short distances. Illustrations of this situation in the case of gathering lines are as follows:

Barnsdall Refineries, Inc.; Louisiana Oil Refining Corp. (Cities Service); Allegany Pipe Line Co., Fords Brook Pipe Line Co., Union Pipe Line Co.-Consolidated Oil Corp.; Magnolia Petroleum Co., White Eagle Oil Corp.-Socony-Vacuum Corp.; National Refining Co., National Refining Co. of Oklahoma-National Refining Co. (Ohio); Standard Oil Co. (Kansas).

Of the 40 companies in the group, 25 file no tariffs with the Interstate Commerce Commission or a state commission. Some of the companies carry only oil produced by them, others only oil purchased by them, and others both produced and purchased oil.

Of the 32 companies, whose trunk lines carried only company oil in 1931, 17 file no tariffs. Included are such large systems as those of Shell Oil Co. and Associated Oil and Associated Pipe Line Co. in California and Valvoline Oil Co., with lines in Pennsylvania, West Virginia and Ohio.

2. In other cases, tariffs are filed but no outside oil or gasoline is offered for shipment, though, of course, the company oil which is shipped generally includes oil purchased from independent producers. A few instances of this second type follow:

Keystone Pipe Line Co. (gasoline); General Pipe Line Co. of California; Imperial Pipe Line Co., Ltd.; Great Lakes Pipe Line Co. (gasoline); Pure Oil Co. (Pennsylvania); Sun Oil Co. (gasoline).

3. Though not offered by the companies in explanation of their carrying no outside oil or gasoline, it may be inferred that joint construction or joint ownership of lines reflects a tendency to provide facilities which one or more of the parties would have had to hire at going rates had there not been a participation in ownership. Instances are as follows:

Arkana Transit Corp. (Atlantic Refining and Cities Service); Great Lakes Pipe Line Co. (six participating owners); Texas-Empire Pipe Line Co. of Texas (Texas Corp., Cities Service, Tide Water); Associated Pipe Line Co. (Tide Water, Standard of California, Southern Pacific Co.).

Each of these companies except the last files tariffs. As earlier indicated, other jointly owned pipe lines carry outside oil, notably in the case of Texas-Empire Pipe Line Co. (Delaware and Illinois).

The preceding analysis indicates that outside use of

trunk pipe lines is generally confined to a few large shippers, representing other units of the oil industry, and that only in the case of the gathering lines of certain companies can there be said to be anything approaching a general shipping public. There are substantially no minimum tender requirements attaching to the use of gathering lines. Such requirements in the case of trunk lines are generally believed to have played a large part in the earlier development of the oil industry and to have contributed to the high degree of concentration which at present characterizes the oil business as a whole.

The present minimum tender requirements reported by pipe lines are set forth in the individual reports. The most common requirement for interstate shipments is 100,000 bbls., with 25,000 bbls. the second most common minimum. The lower requirement is more likely to apply on lines whose hauls are relatively short, though such is not always the case, as is evidenced by the fact that some short lines have the higher or 100,000-bbl. requirement while some long lines, such as the newly constructed Texas-Empire Pipe Line Co., require only 25,000-bbl. minimum. Other interstate minima range down to and even below 10,000 bbls. In many instances a pipe line governed by the requirements of its connections, observes a low minimum in its local tariffs. Some states have prescribed minima, the most notable instance being the 500-bbl. requirement of Texas.

Various considerations bear on the use of the stated minima. As indicated, there are provisions in tariffs by which groups of shippers are permitted to tender individual lots of the same grade of oil as a single shipment, thus in effect giving the individual shipper lower minimum. This arrangement commonly requires that the individual shipper have not less than a stated amount of oil of the given grade, as in the case of Arkana Transit Corp., whose 25,000-bbl. minimum can be met by a 10,000-bbl. tender from a single shipper. Some pipe line companies have specifically stated that they count the oil offered by their own affiliates in making up the minimum tender. How far this provision can be availed of has not been ascertained. On the other hand, detailed information is not at hand which would show to what extent individual pipe line companies relax their tender requirements.

Ownership and Use of Storage Provided Under Present System

In connection with the use of pipe lines by what are known as "outside" companies, the House Committee on Interstate and Foreign Commerce devotes considerable attention to comments on the ownership and use of storage facilities provided by the pipe line companies.

"The ownership of storage facilities is a matter of interest to the smaller producing units of the oil industry, in as much as in the absence of facilities of their own, and, where such is the case, of a right to use those of others, they are not able to hold their production for a more favorable price or to make as effective arrangements as otherwise for selling to refiners other than those taking the bulk of the production or setting the governing price in given fields," the committee says.

"Distinction should be made between storage facilities proper and the tankage required in the operation of pipe lines. Conditions are so varied and exact terminology is so lacking that classification of existing facilities is difficult. In some cases facilities are owned in which oil is temporarily stored awaiting shipment. Such storage is primarily required for the efficient conduct of pipe line operations. To maintain a proper flow of oil, it is also necessary to have facilities at points along the line in which oil can be placed until the line ahead is ready to handle it. Sometimes special facilities are required where lines traverse a section of broken topography. The flow of oil by gravity down inclines accumulates supplies at a somewhat greater rate than that at which the oil can be moved by pumping stations up an ensuing incline, thus necessitating temporary storage of the excess oil at intervals along the line.

"As agencies of transportation, pipe line companies would ordinarily have no storage facilities as such in the field and in only exceptional cases at points along their routes. Field storage or storage at other points is generally owned by the producer or purchaser of the oil. Pipe line tariffs generally provide that oil will not be received for shipment unless provision is made for its immediate acceptance in the consignee's tanks at destination. Some 50 of the pipe line companies proper, i.e., companies which do not engage in production or refining operations in addition to transportation, report that they have only operating tankage of the kinds illustrated above. The shipper as such would have an interest in only such of these facilities as are situated at receiving or delivery points. Their right to have their oil transported at published tariffs is subject to such operating practice as the carriers find necessary for the efficient and economical conduct of their business.

"Storage facilities in the true sense of the word, i.e., facilities in which oil may be placed until sold, until ready for movement to other points, or until it is refined, may, however, be owned by pipe line companies, though not in their specific capacity as transportation agencies. Such facilities may be situated in the field, at junction points of gathering lines with trunk lines, at points of transshipment to tank steamers, as at the Gulf ports, or, to a less extent at the present time, to rail tank cars, or at refinery sites.

"Of the strictly pipe line companies reported on in this investigation, the following appear to have storage facilities, though some of the figures to be cited may relate to working tankage or to facilities designated by their owners as working tankage but which in effect serve as storage facilities.

STORAGE FACILITIES OF PIPE LINES

	Capacity (barrels)
Arkana Transit Corp.	10,000
Associated Pipe Line Co.	
Atlantic Pipe Line Co.	8,637,000
Continental Pipe Line Co.	1,291,025
Crude Transit Co.	
Elk Oil Co.	3,000
Empire Pipe Line Co.	1,790,400
General Pipe Line Co. of California	
Great Lakes Pipe Line Co. (Delaware and Illinois) (refined products)	
Illinois Pipe Line Co.	7,272,000
New Mexico Pipe Line Co.	56,000
Pondera Pipe Line Co.	49,500
Producers Transportation Co.	11,057,301
Shell Pipe Line Corp.	8,731,750
Sun Oil Line Co. of Michigan	
Texas Pipe Line Co.	10,699,083
Texas Pipe Line Co. of Oklahoma	2,007,627
Thurber Pipe Line Co.	116,000
Tuscarora Oil Co., Ltd.	750,000

"Of the above companies 16 state that their facilities are open to use by those who ship over their lines and 3—Associated Pipe Line Co., General Pipe Line Co. of California, and Producers Transportation Co.—all companies operating in California, state that their facilities are not available for use by independent producers. One adds that no application for such use has ever been received.

"There remain companies engaged primarily in the production, purchasing, marketing, or refining of oil, though some also own pipe lines. Facilities owned by companies in this group would generally be used for storage purposes in the true sense of the term, though some working tankage is included. The information as to the extent of their ownership of such facilities is given in the table.

STORAGE FACILITIES OWNED BY COMPANIES OTHER THAN PURELY PIPE COMPANIES

	Capacity (barrels)
American Petroleum Co.	2,915,000
Atlantic Oil Producing Co.	110,000
Atlantic Refining Co.	1,737,000
Atlas Pipe Line Co., Inc.	1,465,000
Barnsdall Refineries, Inc.	2,554,000
Carter Oil Co.	18,182,000
Colonial Beacon Oil Co.	483,847
Col-Tex Refining Co.	
Continental Oil Co.	13,800,629
Crew Levick Co. (pipe line division only)	319,380
Deep Rock Oil Corp.	1,140,000
Houston Oil Co.	1,465,000
Humble Oil & Refining Co.	23,096,500
Imperial Oil Refineries, Ltd.	269,963
International Refining Co.	400,000
Louisiana Oil Refining Co.	2,042,750
Mid-Kansas Oil & Gas Co.	1,845,000
Midwest Refining Co.	12,458,180
National Refining Co. (Ohio)	688,800
National Refining Co. of Oklahoma	519,000
Ohio Oil Co.	15,564,000
Pasotex Pipe Line Co.	
Pure Oil Co.	8,770,000
Shell Oil Co.	1,469,000
Shell Petroleum Corp.	2,028,000
Sinclair Prairie Oil Marketing Co.	56,515,000
South Penn Oil Co.	2,354,500
Spartan Refining Co.	483,000
Standard Oil Co. of California	35,680,000
Standard Oil Co. (Indiana)	800,000
Standard Oil Co. of Kansas	58,500
Standard Oil Co. of Louisiana	25,240,828
Standard Oil Co. of New Jersey	7,495,781
Stanolind Crude Oil Purchasing Co.	41,098,200
Stanolind Oil & Gas Co.	4,388,000
Sun Oil Co.	4,737,200
Texas Co. (Delaware)	33,914,925
Texas Co. (California)	13,143,725
Texas Pacific Coal & Oil Co. of Texas	1,533,000
Transit & Storage Co.	636,753
Union Oil Co. of California	15,664,421
Valvoline Oil Co.	307,674
Total	357,375,056

"The companies named above, which do not have pipe lines were not required to answer as to any rights the public may have in the use of their storage facilities. The remaining companies generally indicated that their facilities are for the storage of oil produced or purchased by them. The answers of some were not complete enough to establish the rights of others to use such facilities. Two exceptions are American Petroleum Co., which states that its facilities are open to the use of others under the Texas law but that no request for such use has been made, and Gulf Coast Oil Co. which states that it 'operates as a common storer.'

"The capacity indicated by the incomplete figures given above aggregates 357,375,056 bbls., or approximately 51 per cent of the total of 705,013,000 bbls. of crude oil storage capacity in the United States. There are also 297,732,000 bbls. of storage capacity for refined products. Of the crude oil storage, 82 per cent is at tank farms and 18 per cent at refineries. In addition, there are 10,000,000 bbls. of producers' storage, representing tankage at wells, and 23,000,000 bbls. of storage capacity in pipe lines. Approximately two-thirds of the crude oil storage in tank farms is found in Texas and Oklahoma; California has about 15 per cent of the total. California leads in what is designated as crude oil storage at refineries, having 48 per cent of the total. Texas, Louisiana, and New Jersey together have about 30 per cent of all such facilities."

Storage Charges

Each company operating pipe lines was requested to state whether there is any difference in its transportation or storage charges for customers receiving substantially the same service, quantity excepted, and whether there is any such difference in charges according to quantity of oil or refined products offered.

"The answers to these questions," the committee states, "were almost universally in the negative. In the many cases in which no outside oil is carried the questions were considered inapplicable, except where there were published tariffs. Some companies indicated that they vary their charges not only according to distance but also according to the number of pumpings required and the character of the terrain which their lines cross. Such differences would therefore reflect varying cost factors.

"The companies which did not affirm that there were no differences in their charges as between different customers are Union Oil Co. of California and its subsidiary, Producers Transportation Co., and Cosden Pipe Line Co., a subsidiary of Mid-Continent Petroleum Corp. The first two state that their rates are such as are agreed upon from time to time. Cosden Pipe Line Co. states that such outside oil as it moves is carried by contract rates. Its lines primarily serve the group refinery. These companies do not classify themselves as common carriers."

Ratio of Interstate Movement To the Total Pipe Line Traffic

The ratio of movements of crude oil and gasoline across state lines to the total pipe line movement, is the subject of a careful analysis of this subject by the committee:

"Considerable interest attaches to the extent to which crude oil or refined products move by pipe line in interstate commerce," the committee said. "Determination of doubtful cases requires the application of more or less well-defined legal concepts to the concrete facts of individual situations. Thus, not only must account be taken of the physical movement of the commodity but also of the arrangements under which it is produced and sold, including the relations which exist between members of an integrated group of companies and be-

tween such companies and others outside the group, of the tariffs under which it moves, of the continuity of the physical movement, of the maintenance of the identity of individual shipments, and of various related matters.

A brief summary of the data at hand follows:

RATIO OF OIL AND GASOLINE MOVED BY TRUNK PIPE LINES ACROSS STATE LINES TO TOTAL, 1931*

Ratio (per cent)—	No. of companies	Per cent of companies
100	21	28.8
90-99.9	9	12.3
75-89.9	5	6.8
50-74.9	4	5.5
25-49.9	4	5.5
1-24.9	3	4.1
0	†17	23.3
Data incomplete	‡10	13.7
Total	73	100.0

*Includes movements under joint tariffs.
†Includes eight California companies.
‡Includes several companies known to be extensively engaged in interstate movements.

"It will be seen that nearly 30 per cent of the companies engage exclusively in movements across state lines, that three-fourths or more of the business of nearly another 20 per cent represents interstate movements, and that about 23 per cent report no movements across state lines. Included in this group are eight California companies, whose lines or refineries are wholly in that State or wholly in Texas, but whose refined products move extensively in interstate and foreign commerce.

"Because of the fact that the oil reported by the individual companies frequently passes through the lines of two or more companies, thus causing duplication in the figures, it is difficult to state even an approximate average ratio of oil moved across state lines or under interstate tariffs to the total carried. Disregarding this factor of duplication and using data as are available, the following rough approximations are offered.

RATIO OF MOVEMENTS OF OIL AND REFINED PRODUCTS ACROSS STATE LINES OR UNDER INTERSTATE TARIFFS TO TOTAL, 1931

	Weighted average percentage
Group 1—Subsidiaries of large or medium sized integrated units of oil industry	51.73
Group 2—Subsidiaries of partially integrated or smaller integrated units of oil industry	63.43
Group 3—Independent pipe lines	93.71
Total	56.56

Pipe Line Is Most Economical and Efficient Transportation

The pipe line is the most economical and efficient mode of transportation for oil. The construction cost is relatively low. The route is usually straight, being without the railroad necessity for tapping centers of population. There are no expensive terminals. Cost of operation is small per unit transported, operation being almost automatic. Movement is continuous and in but one direction; no empty cars to haul back.

The average cost of transportation by pipe line is estimated at four-tenths of a cent per ton-mile against the railroad's three-quarters of a cent.

The trunk line rate for a barrel of crude from Oklahoma to Whiting, Ind., is 46 cents against 93 cents by rail; to Cleveland, Ohio, 62.5 cents against $1.445 by rail; to Bayonne, N. J., 76.75 cents against $1.835.

From North Texas the pipe line rates are the same, but the rail rates are 6.5 cents higher.

From Oklahoma City to Anchorage, La., the pipe line rate is 37.5 cents and the freight rate 85.68: from Cushing, Okla., to Port Arthur, Tex., 32.5 cents against $1.05; and from Longview, East Texas, to Baytown, Tex., 25 cents per barrel against 37.4 cents by rail.

The pipe line tariff on crude generally is about half that by rail.

Divorced Lines Could Not Transport Oil as Cheaply; Ratable Taking Law Would Also Be Nullified

Some remarks by Gen. Jacob F. Wolters in discussing a pipe line divorcement proposal in Texas are equally applicable to the present bill.

There is the big question, he said, who, if the oil companies are forced to sell the pipe line companies will buy them, and who will build to newly discovered oil fields?

One gentleman said that was easy. All the parent company had to do was to issue pipe line company stock to its stockholders in return for the transfer of a proportionate part of the stock of the parent company back to the parent company. Not so easy as all that. Mr. Stockholder does not have to make any such trade and he probably would not choose to do so if he understood the situation.

The same gentleman argued that various companies are controlled in their stock ownership by groups, and that therefore it would be easy to accomplish the interchange of stock. Even this optimistic gentleman will concede that The Texas Pipe Line Co. would not be able to swap very readily with its parent-holding stockholders.

We are told that the purpose is to wrest control of the oil industry from the integrated companies. Pray how would control be wrested from them if Mr. A and others composed a group closely syndicated that own an integrated company, if the law took the stock ownership from the company and placed the pipe line common carrier into their individual hands? Such a course it must be admitted can not be pursued by companies such as The Texas Company. While The Texas Company with a stockholders' list of 90,000, is outstanding in that particular, there are many, many integrated companies who produce, transport, refine and market, similarly situated. Would it not be fine business to have the companies so frequently and so lustily declaimed against own and operate their pipe line through a group of controlling stockholders of the company to operate their pipe lines practically as they are operated now and leave those companies without the necessary plant facilities to transport their oil?

The truth is that if the companies were compelled to dispose of their pipe line systems and same could be sold to people who would operate them independently, such systems could not transport oil at anything like so low a rate as those now in effect, both intrastate and interstate. The reason for that is that now each pipe line company has an assured business from its allied producing company, whereas if the pipe line was entirely independent and separated from any producing properties it would have no assurance of the business that would maintain it. Whether owned by a producing company or separately owned, without production as an ally, some regulatory body would still have to fix the rates, and these rates must be fixed so that the pipe line companies' investment will not be destroyed.

Ratable Taking

I now come to a feature which I believe the few alleged independent operators who, it is said, support this measure have entirely overlooked.

The Small bill as passed by the Forty-first Legislature and amended by the Forty-second Legislature, provides that any purchaser of crude petroleum oil that owns any interest by stock ownership or otherwise in not only a common carrier, but in any pipe line, is a common purchaser of crude petroleum oil and must purchase ratably among leases in a pool and pools within the state and in proportion to its own production. The Texas Company pursued this policy as the company's policy from its very inception. The legislature only transmitted the custom and policy of this company into law when it enacted the common purchaser provision referred to. There are those who question the constitutionality of this act. As applied to oil, the courts have not passed upon it.

But this is certain, that when the purchasing companies—that is to say, the refineries—are divorced from the pipe line, then no man can write a law requiring a purchaser without such pipe line interests to buy ratably. That fact is recognized in the existing law for it is limited to that purchaser who owns an interest in pipe lines. What would be the effect?

The purchasing companies who buy oil on the coast are the purchasing companies that own an interest in pipe lines, and they must buy ratably. The Texas Company, in the Mid-Continent area, consisting of the states of Texas, Louisiana, Oklahoma, Arkansas, Kansas and New Mexico, purchases daily 72,000 bbls. and produces daily 57,000 bbls. With its present producing properties in this area it could easily produce several times the total amount daily. If a company has no interest in a pipe line why would it care to purchase oil from various pools when it could produce it itself?

There are a number of companies owning pipe lines running into parts of Texas, as, for instance, into East Texas and into North Texas, whose refining properties are located outside of Texas and to the North. These companies have production in Texas, and, having a pipe line in Texas, buy crude petroleum ratably in accordance with the provisions of the law. With their pipe lines taken from them, with no obligation to buy ratably in accordance with their own production, would it not be the natural business thing for these companies to run only their own production in Texas and buy not a barrel of oil in Texas when they can get it in Oklahoma, or in Kansas, nearer to their refining facilities, and thus save the additional cost of transportation that would be involved in carrying it from Texas pools through Oklahoma, Kansas, Arkansas and other states, where they can purchase oil?

Even eliminating from consideration the common purchaser act, these companies now transport their own production, which is not sufficient in amount to fill their pipe lines, but plus ratable purchases is sufficient to give their pipe lines a load such as will compensate the operation thereof. Divorced from their pipe lines and compelled to carry their oil over an independent line, they would not be interested in how much the independnt line carried and therefore would buy in that market in which it would be most economical for them to buy, and transport.

Frequently it is charged that common carrier pipe lines are not common carriers in fact, and do not in fact carry oil other than that of their allied company. The penalties for the refusal to accept lawfully produced oil for transportation are very heavy, and no common carrier pipe line would dare refuse to accept for carriage lawfully produced oil when tendered. Nineteen per cent of the oil carried by The Texas Pipe Line Co. in 1932 was lawfully produced oil of people other than The Texas Company. The Texas Pipe Line Co. has never refused to transport lawfully produced oil for other people. It has young men in its employ who solicit the transportation of lawfully produced oil belonging to others than The Texas Company. It carries it in accordance with the law and the regulations of the Railroad Commission.

It is not improper to call attention to the fact that literally millions of people not only own stock and bonds of oil companies, but have loans in banks secured by such securities as collateral. Largely the frozen assets of banks of which we hear so much consist of notes secured by stocks and bonds of industrial corporations, including oil companies. Such a bill as this, so disastrous in its effect upon the oil companies, will tend to further depreciate the value of stocks owned not by a few millionaires but in a large sense the masses of the people.

One Allegation Refuted

Statistics indicate there is in the United States approximately 100,000 miles of crude oil pipe lines, which represent an investment of $1,000,000,000, of which $900,000,000 is in pipe lines alone, and $100,000,000 is necessary additional facilities for handling of crude oil, which amounts to approximately 900,000,000 bbls. per year, and the published earnings for 1931 indicate about 10 cents per barrel on every barrel handled.

Increased taxes and reduced tariffs will reduce this to approximately 8 cents per barrel for 1933, which should refute the statement often made that the major companies use their pipe lines to increase their earnings at the expense of the small producer and refiner.

The Varied GASO Line Includes correctly designed Equipment for every Pumping Requirement

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Gaso Rodline Pump Fig. 201—a simple, easily operated pump for general service.

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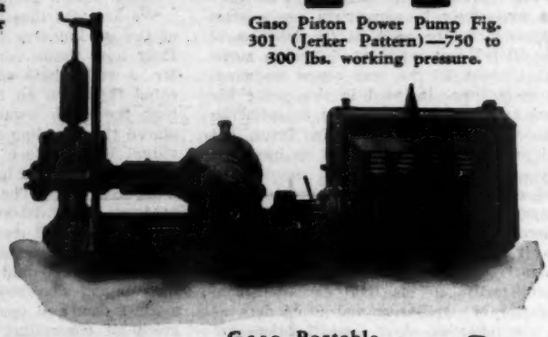

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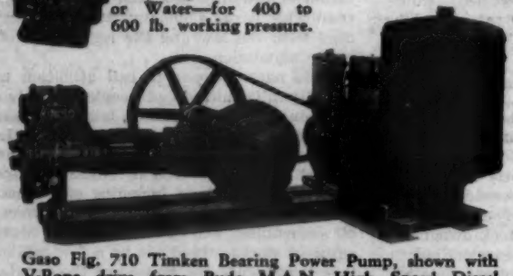
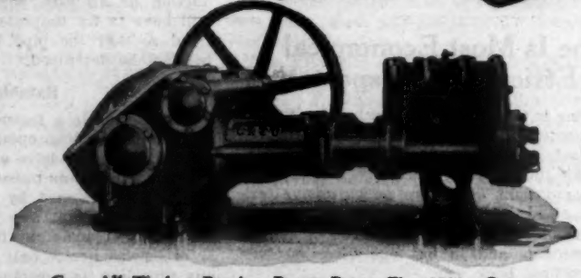




Gaso Fig. 710 Timken Bearing Power Pump, shown with V-Rope drive from Buda M.A.N. High Speed Diesel Engine. Capacities from 54 bbls. per hour at 1400 lbs. pressure to 500 bbls. at 300 lbs.

Gaso All Timken Bearing Power Pump Fig. 1508. Capacities from 63 bbls. per hour at 800 lbs. pressure to 250 bbls. at 250 lbs. Arranged for any type of drive

GASO PUMPS

for every oil industry need

Mid-Continent Refiners Fail to Reach Agreement As to Changes in Gasoline Octane Ratings

By C. O. WILLSON

HOT SPRINGS, Ark., Apr. 6.—Representatives of Mid-Continent refining organizations assembled here at the annual meeting of the Western Petroleum Refiners Association failed to reach a final decision as to the proposed changes in octane ratings of domestic gasolines as a basis for quotations. Various proposals were discussed at both the morning and afternoon sessions today and it appeared for a time that sponsors of important changes in octane brackets as now used by refiners in their tank car sales of gasoline would be successful. The discussion finally became tied in with proposed changes other than octane ratings and the opposition succeeded in securing approval of a mail vote procedure which in effect means that any final action probably will be postponed at least 30 days.

The delay was a keen disappointment to representatives of several companies who had stressed the necessity of taking immediate action to correct a market situation which is unsatisfactory from several angles. Following the meeting it was understood that this group would make another attempt to secure early modification of present methods of quoting gasolines at least covering octane ratings with other changes to await further consideration if necessary.

Varying Positions

The action today was another illustration of the difficulty in securing co-operative action involving specifications of products in which the position of individual companies varies due to differences in refining equipment and marketing practices. R. R. Irwin, president of the White Eagle Oil Corp., who presided at the technical meeting this morning when the matter of specifications was first brought to the attention of the association, pointed out this situation and said that compromises between the opposing views were necessary if anything was to be accomplished. In line with this counsel, several speakers in explaining the position of their companies indicated their willingness to abide by any decision of a majority of those present.

Developments in this matter of great importance not only in the Mid-Continent but the entire industry can best be understood if reported in their chronological order. Previous to the meeting here the manufacturing and marketing committees of the association had given consideration to the necessity of making changes in present octane brackets for U. S. Motor gasoline and the 60-62 400 endpoint grade, which have been commonly accepted throughout the Mid-Continent and Middle West and are used by daily and weekly trade and financial publications in reporting prices. These octane brackets for the U. S. Motor and 60-62 400 endpoint grades are: Under 57 octane (third grade); 57-65 octane (regular grade) and above 65 octane number (premium grade). In rating these gasolines, the C.F.R. laboratory method was recognized as standard in determining octane values. Effective April 1, this method of testing was succeeded by what is known as the C.F.R. Motor Method which had been adopted as a tentative standard by the American Society for Testing Materials and has been generally accepted by the automotive and petroleum industries in this country. This method of testing, materially changes the relative ratings of gasolines although it was agreed by the manufacturing committee of the Western Petroleum Refiners Association after many tests that a 5 per cent reduction in octane number would cover the average change in the Mid-Continent area.

There are several gasolines depending on method of manufacture and the properties of the crude oil which are penalized more than the 5 per cent average and it was apparent in the discussion today that this fact was a factor in the position taken by individual companies. This change in method of antiknock testing was one of the developments which emphasized the necessity of making immediate changes in the octane brackets that have been in effect over the past two years.

Favors Three Brackets

In addition there has been wide dissatisfaction with the present octane ratings, with many requests for changes before it became known that the method of testing was to be changed. The need for a change was briefly summarized here by C. L. Mayhall, sales manager of the Anderson-Prichard Oil Corp., and the Col-Tex Refining Co., independent refining organizations with refineries in Texas and Oklahoma. Mr. Mayhall suggested the following changes before the technical group this morning, a meeting which was also attended by a number of executives and sales managers:

U. S. Motor Gasoline Classification

59 octane and under.
60 octane to 64 inclusive.
65 octane and above.

The same classification was recommended for the 60-62 400 endpoint grade.

Considering the change in method of testing and the increases in octane number and the net result is an advance of approximately five numbers for all classifications of the two grades. In explaining his recommendations, Mr. Mayhall said:

"The changes seem timely and desirable because, unquestionably, these octane classifications for the past year have been too low and have permitted numerous small refining concerns, operating only a tea-kettle, to sell gasoline at the third grade price, but to guarantee they would deliver an octane checking into the second bracket. Therefore the buyer could see no reason for paying a higher price for second bracket gasoline. This has had a most detrimental effect upon our market structure, and with all of the better refiners improving their refinery technique, unquestionably these brackets should be raised.

"We insist that three octane classifications should be carried under each specification, because we, as well as several other association members, have considerable amounts of gasoline sold in the top bracket price and expect to continue to sell into that bracket a certain amount of our products. The trade is already educated to accept three brackets, and until we see further how the new Motor Method will work in actual usage, we should make no changes.

"We feel sure the octane classifications as suggested above will improve our sales psychology immensely. It will make it very difficult for certain people to get their inferior products into the second bracket—it will keep them in the third bracket where they belong. It should aid us in carrying the proper market differentials and seeing that our trade is protected against misrepresentation."

Several speakers supported the plan suggested by Mr. Mayhall, although there were some who favored a slightly different division as to the octane numbers for the three brackets. Among those speaking in favor of the three brackets were L. R. Crawford, president of the Producers & Refiners Corp.; Frank Holsten, vice president of the Barnsdall Refineries, Inc., and L. van Eeghen, vice president of the Shell Petroleum Corp.

Favor Two Brackets

Support for a two-bracket classification came from Walter Miller, vice president of the Continental Oil Co., and R. E. Alden, assistant director of research for the Phillips Petroleum Co. Mr. Miller contended that establishing a top bracket would mean a continuance of the octane race among the larger refiners who have their house brands coming near or within this specification. He predicted that these companies would continue to improve their octane ratings so that they would be in the upper bracket. He favored one grade which would be 59 octane and below and a second grade of 60 and above. He said under this arrangement there would be less incentive to improve the octane ratings of the house brands.

B. L. Majewski, vice president of the Deep Rock Oil Corp., questioned the desirability of having both the U. S. Motor and 60-62 400 endpoint grades, pointing out that the tendency was to lower endpoints in the first grade so there was little or no difference in specifications between the two grades. His discussion brought to the front the desirability of having the association adopt its own specification and not using the present government U. S. Motor specifications as the base around which to develop trade quotations. This plan has been discussed over the past two years in association circles and the matter of gasoline specifications has been worked out and received tentative approval by the manufacturing committee of the association. No effort had ever been made to secure the general approval of the association.

A committee was appointed to immediately consider the feasibility of adopting W.P.R.A. (Western Petroleum Re-

(Continued on Page 30)

W. P. R. A. Membership Pays Tribute to George Locke

HOT SPRINGS, Ark., April 6.—The membership of the Western Petroleum Refiners Association paid tribute to George D. Locke its retiring president in a material way at the final session of the twenty-first annual meeting today. Mr. Locke, who was forced to retire after serving one year as president in order to devote his entire time to his duties with the Barnsdall company was given a gold wrist watch. A silver coffee service was also presented to Mr. and Mrs. Locke, whose home is in Chicago.

The presentation was made by H. T. Ashton, president of the Lubrite Refining Corp., the newly elected first vice-president of the association. A rising vote of thanks was extended to Mr. Locke for his untiring services during one of the trying periods in the history of the Mid-Continent refiners.

Howard Bennette, for the past ten years, the active head of the association's staff with headquarters in Tulsa was elected president to succeed Mr. Locke. Mr. Bennette will continue to be in charge of the association's activities. In addition to Mr. Ashton, the following vice-presidents were elected for the coming year: L. R. Crawford, president, Producers and Refiners Corp., Independence, Kans.; T. H. Barton, president, Lion Oil Refining Co., El Dorado, Ark., and Roy B. Jones, president, Panhandle Refining Co., Wichita Falls, Texas.

Directors elected for the coming year are: C. L. Henderson, R. G. A. van der Woude, A. E. Landsittel, C. M. Boggs, C. B. Watson, D. R. Hamilton, E. S. Karstedt, H. A. Trower, L. B. Simmons, A. L. Derby, T. H. Barton, Roy B. Jones, Rex Winget, R. R. Irwin, Sheldon Clark, W. G. Skelly, D. W. Harris, L. B. McCammon, R. W. McDowell, E. J. Marston, Ed Moore and B. H. Gray. The following former presidents of the association are ex-officio members of the board of directors: George N. Moore, P. M. Miskell, L. R. Crawford and George D. Locke.

Proposed W. P. R. A. Motor Fuel Specifications

Table showing proposed W.P.R.A. specifications recommended for adoption by special committee at annual meeting of the Western Petroleum Refiners Association. The government specifications for U. S. Motor and Domestic Aviation gasolines are shown for the purpose of comparison. Where a blank mark appears no specification is required.

	W.P.R.A. specification			Government specifications	
	No. 1 lower bracket	No. 2 middle bracket	No. 3 top bracket	U. S. Motor	Domestic Aviation
Corrosion	Negative	Negative	Negative	Negative	Negative
Color	.....	.....	.....	.....	.....
Gum	.....	(*)	(*)	.....	15 mgm (2 hrs. Glass)
Sulphur	0.10	0.10	0.10	0.10	0.10
Octane number†	59 and below	60–64	67 and above	.....	.....
Distillation—					
Per cent evaporated (min.)					
10	167° F.	‡145° F.	‡145° F.	167° F.	167° F.
50	284	265	265	284	221
90	392	365	365	392	311
98	.....	.....	.....	.....	347
E. P.	.....	.....	.....	.....	374

*Four-hour accelerated induction test for gum. All W.P.R.A. tests to be made according to A.S.T.M. Standards. †Octane numbers to be determined by C.F.R. Motor Method. ‡For winter grade 130° F. Tolerance of 10° permitted up and down.

Heavy Fines and Imprisonment for Violators of Proration Law Now in Effect in Oklahoma

A new proration bill has been passed by the Oklahoma Legislature which contains sharp teeth. It puts the oil and gas conservation laws into the hands of the Corporation Commission and gives it wide authority, and provides heavy fines and penitentiary sentences against violators of the law and against bribers or takers of bribes. It will make it very dangerous for anyone to produce and sell illegal or "hot" oil. Governor Murray signed the bill on April 10, and as it was an emergency measure it became effective immediately.

The following extracts from the law cover its main points:

Defines Waste

Waste includes economic waste, underground waste, including water encroachment in the oil and/or gas-bearing strata, surface waste incident to the production of oil in excess of transportation or marketing facilities, or reasonable market demand. Such conditions as constitute waste are prohibited and the Corporation Commission is charged with the duty to make rules, regulations and orders for the prevention of such waste and for the protection of all fresh water strata and oil and/or gas-bearing strata encountered in any well drilled for oil or gas. In Section 3 the waste as applied to gas contained in or produced from a common source of supply of oil shall, in addition to its ordinary meaning, include the unreasonable production and/or the inefficient or wasteful utilization of gas in the operation of oil wells; the escape, directly or indirectly of gas from oil wells into the open air in excess of the amount necessary in efficient drilling, completion or operation of wells; the escape, blowing or releasing, directly or indirectly, into the open air of gas produced from wells producing gas only, or of gas and gasoline only, drilled into any common source of supply, save only such as is necessary in the efficient drilling and completion of wells, and the unnecessary depletion or in efficient utilization of the gas energy contained in any common source of supply.

In order to prevent the waste or to reduce the dissipation of the gas energy contained in any common source of supply, the commission, in addition to its other powers, is given authority to limit the production of gas from wells producing gas only, or gas and gasoline only, to a percentage of the daily open flow capacity of such wells that is less than the percentage of oil production allowed to oil wells drilled in the same field.

Equitable Taking of Oil

Wells in prorated fields, unless otherwise authorized, may produce only such proportion of the allowable as their production bears to the total allowable.

Potential tests shall be taken at regular intervals to determine the productivity of each well.

Twenty-five barrels per day is the minimum limit of allowable production per well.

The act provides for adequate meters on pipe lines in prorated fields for measuring the quantity of oil shipped to refineries, loading racks or to storage.

Provision is made for nominations of crude oil by purchasers and for the submission of reports of oil purchased or transported.

Every operator, when required, shall keep books on oil produced and a record of sales of oil each day from each of the operator's properties.

The commission may require maps showing the location of all pipe lines in a common source of supply showing pumps, and tanks, size and capacity, connections, etc.

Operators are required to supply all details of production and sale of oil, including name of carrier, purchaser and destination. Any operator refusing to file such report, in addition to other penalties, may be required to discontinue to produce any oil from any leasehold with respect to which the operator has failed to make a report, until such report shall have been filed, after which such operator may make up the production lost to him through his failure to report.

Any report, statement, map or drawing submitted on demand of the commission must be verified by a responsible person satisfactory to the commission.

Commission's Authority

The commission is given jurisdiction to make any and all orders, rules and regulations authorized and provided for in the act after a hearing before the commission, which shall have been called at least 10 days before hearing is held. The hearings are made open to all interested persons.

The act sets forths the wide powers of the Corporation Commission in all matters pertaining to the enforcement of its orders, including punishment for contempt and disobedience, or violation of the provisions of the law and of any of the commission's orders.

Punishment for Violations

The act provides a fine not exceeding $1,000, or confinement in the Oklahoma County jail for a term not exceeding one year, or both, for contempt of the commission in the way of disrespectful or disorderly conduct in the presence of the commission. It provides a fine of $5,000 for disobedience of any provision of the act or any of its orders, rules, regulations or judgments rendered under the provisions of the act and each day such disobedience or violation shall continue shall constitute a separate and additional contempt punishable by a fine not exceeding $5,000. Any fine or penalty assessed shall be a lien upon all the property of the offender within the state except the homestead of such offender.

Proceedings for contempt for disobedience or violation of the provisions of the act may be commenced by the filing with the commission by the attorney general, the proration attorney, the proration umpire, the assistant proration umpire, or by any producer of oil or any oil purchaser in the state of a complaint verified upon information and belief.

Authority of Proration Officers

The proration umpire, his assistant and deputies, are authorized to go upon and inspect all properties coming within the provisions of the act, for the purpose of ascertaining whether the law is being complied with, and making it their duty to report all violations.

The commission and the proration officers are given the right to close any and all wells overproduced in violation of the act, or to order the production of such well or wells to be reduced until the condition of overproduction is equalized. If the commission issues an order for a temporary shutdown of a well or wells pending a hearing on a complaint that the well or wells are overproducing, and the order is not obeyed within 24 hours, the proration officers are instructed to shut down such production complained of. Prompt hearings on such complaints are provided. If upon hearing the complaints it is found that the order was wrongfully issued, the producer complained of may make up his production lost on the days his property was shut in or his production reduced.

At hearings of the commission on the subject of crude oil nominations purchasers may submit their nominations by mail or telegram.

Appeals from the commission's orders under the act shall be filed with the Supreme Court of the state and no other court has jurisdiction, and the Supreme Court has jurisdiction only on appeal.

Punishment for Obstructing

The act imposes a fine of $500 or imprisonment in jail for 30 days or both against any one obstructing any proration umpire, assistant or deputy in carrying out the commission's orders.

Penitentiary Offenses

If any two or more persons conspire to violate any provision of the act, then each of such persons shall be subject to a fine of $5,000 or imprisonment in the state penitentiary for a period of five years or both.

A fine of $5,000 or imprisonment in the state penitentiary for five years, or both, may be imposed against any one who corruptly gives, offers or promises to give to any member of the commission, proration umpire, assistant or deputy proration umpire, or any agent or employe of the commission, any gift or gratuity whatsoever with an intent to influence any such officer or person in his acts or conduct with respect to his duties under this law, and the act provides a fine of not exceeding $10,000 or 10 years in the state penitentiary against any member of the commission or any such proration officer or employe above referred to who asks, receives or agrees to receive any such gratuity.

In all cases involving bribery and the receipt of bribes, and in cases of conspiracy, immunity shall be given to the person who "shall first furnish information in relation thereto as against the other party or parties and in any prosecution therefor shall testify to the same truthfully and fully."

Salaries of Proration Officers

Proration Umpire—The act creates the position of proration umpire and assistant umpire. The person appointed to the position of umpire must file a bond with the state in the sum of $50,000, the surety to be approved by the commission; shall take the constitutional oath of office. The tenure of his office shall be at the pleasure of the commission. He shall receive a salary of $6,000 per year, payable monthly. He shall obey and enforce all orders of the commission, and investigate and report on all charges of violations of this act.

The assistant proration umpire will receive a salary not to exceed $4,800 per year. He shall possess all the powers and authority of the umpire, but work under the umpire's orders, and take the place of the umpire in the latter's absence or in case of the umpire's inability to perform his duties. Both umpire and assistant shall have had at least seven years' practical experience in the production of oil.

Proration Attorney—The proration attorney shall receive a salary of $6,000 per year. His tenure of office shall be at the pleasure of the commission. He shall be the legal advisor of the proration umpire and his assistant and deputies, and shall appear for the state in all proceedings under this act before the commission and file and prosecute charges of violation of the act, and defend in all actions taken against the state in cases relating to this act.

The act provides for the employment of not more than 30 deputies with salaries as follows: Not more than five deputies, $3,000 per year each; not more than 25 deputies, $1,800 per year each; all deputy proration umpires shall have had five years' practical experience in the production of oil. The act provides for clerical and stenographic help and their salaries.

(Continued on Page 31)

Capper Bill Provides Heavy Penalty for Interstate Shipment of "Hot" Oil

WASHINGTON, D. C., Apr. 10.—Federal prohibition of interstate shipment of petroleum and its products produced in violation of state laws was asked today by Senator Capper (R., Kans.) in a bill he intends to press.

Administration would be under the Secretary of the Interior, who would be authorized to investigate the domestic oil industry and methods of producing, transporting, refinancing, selling and distributing oil, and to recommend to the states what their production quotas should be.

Heavy Penalties

Penalties ranging from fines of $1,000 to $10,000 and from one to five years in prison were provided for in the bill, which proposed to make the following unlawful:

Delivery to any carrier for transportation from any state, territory or district of the United States, or to a foreign country, any crude petroleum or any of the products of crude petroleum which crude petroleum has been produced in violation of any law of the state, territory or district where said crude petroleum was produced.

For the carrier to receive such oil or products for transportation.

For any person to receive or buy any crude petroleum or products produced in violation of the laws of any state, territory or district of origin.

Uniform Conservation Laws

Among the bill's recommendations are that the Secretary of the Interior shall be authorized to:

Recommend to each oil-producing state the enactment of substantially uniform laws for the conservation of crude petroleum, the prevention of the premature exhaustion of the domestic supply, and for the limitation of production to the reasonable market demand.

To adopt and issue regulations from time to time for the proper enforcement and carrying out of the provisions of the bill.

To estimate petroleum needs from time to time for both the domestic and export markets, and advise the states what their production share should be.

To regulate and control drilling and producing so as to promote the maximum ultimate economic recovery of crude petroleum.

To retain underground of crude petroleum, to apportion among the various owners the contents of a common source of oil, conserving the gas and authorizing the unit operation of a common pool.

It isn't enough just to make gasoline of high anti-knock value You have to keep it that way if you want to cash in on it

Dubbs cracking is the way to make high anti-knock gasoline

Universal Inhibitor is what keeps it that way

Universal Inhibitor is a chemical cop —it keeps the oxygen molecules in the air and the unsaturated molecules in the gasoline from ganging up to form gum

It keeps the anti-knock value all in and the gum all out

Its cost is only a trifle

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

Method of Prorating Old Oil Fields by Pressure Control; Oklahoma City Pool as an Example

By JAMES O. LEWIS[1] and HARRY F. WRIGHT[2]
[1]Consulting Engineer, Tulsa; [2]Consulting Geologist and Engineer, Tulsa*

In a previous article† the writers discussed the feasibility of using bottom hole pressure as a basis for proration. In that paper it was possible to discuss only the general principles, particularly as applied to new fields. However, the immediate problem is for a practicable method for prorating equitably fields which have been developed and prorated under systems other than pressure control.

The purpose of the present article is to discuss the application of bottom hole pressures to a developed field, using Oklahoma City Pool as an example. Other types of pools, such as East Texas, differ from it to the extent that the proposed procedures might not satisfactorily apply, so the recommendations herein are not to be taken as covering unmodified in detail, all cases. The article approaches the subject from one viewpoint only, that is, equities between the property owners in the common source of supply. The relation of conservation to proration by bottom hole pressures will be discussed in a subsequent article. In the following discussions the writers assume that the reader is familiar with the previous paper referred to.

Oklahoma City Pool was developed and has been produced under a proration plan based upon the estimated daily capacities of the wells. Potentials have been fixed at irregular intervals by allowing the wells to flow wide open for brief periods from which tests their daily ratings have been estimated. The total allowable for the fields, determined by market demand, has then been allocated in proportion to the potentials.

This potential proration system has resulted in many abuses. It has promoted premature and unnecessary drilling; it has fostered a contest of wits to build up fictitious potentials, and it has induced waste of oil and gas. Coupled with these abuses due to the inherent weakness of the system, there has been much illegal running of oil caused by inadequate supervision. The result has been that pressures now vary widely and irregularly throughout the field.

Before a proration system can be worked out, it is necessary to know upon what legal concepts it is to be predicated. The first is what is the basis for equities? The old law of capture appears to be definitely in the discard. All recent court decisions, both Federal and state, have recognized the principle that the equity of each property owner resides in the oil and gas underlying his surface rights. He is entitled to withdraw all the oil and gas underlying his property, and is likewise entitled to protection against drainage by his neighbors. Withdrawals should therefore be in relation to the reserves underlying each property and in such manner that drainage will not take place from one property to another.

Proration Plan Outlined

For reasons given in the prior article, the writers believe that proration by bottom hole pressures will meet these requisites. The system is based upon control of the causative agent, that is, the gas pressure in the sand, which forces the oil into the hole. In a newly opened pool, the pressures are nearly uniform throughout each sand, and the different productive capacities of the various properties are mainly due to local differences in the nature and thickness of the sand, though partly to the manner of development and operation of the wells. Oil and gas always move from a place of higher pressure to one of lower pressure, regardless of sand capacities and texture; therefore, so long as pressure differences between adjacent properties are prevented, drainage from one to the other is prevented. Proration by bottom hole pressure seeks to maintain substantial equality of pressure between adjacent properties in a pool, as the oil and gas is withdrawn from the common supply. In practice exact uniformity of pressure can not be maintained, since parts of the field are developed and the pressure depleted sooner than in other parts. Differences in pressure over long distances are not of great practical effect; it is local differences that are important.

In the Oklahoma City Pool, we now have pressure differences created not only by the different ages of the wells but large local differences caused by inequitable withdrawals. There are also differences in the different sands and it may be found necessary to treat each sand as if it were a separate pool. This question and some other details will have to be determined by the engineers more familiar with local conditions than the writers.

To apply the proposed pressure control system, it is necessary to determine periodically the relation between the drop in pressure and the production of oil and gas for each property. The principle is similar in application to the well known pressure drop method, that has been applied for many years in estimating gas reserves. In the proposed system it is found how many barrels of oil each property will produce for each pound loss in pressure and this relation, the pressure-production ratio, is used as the basis of allocating production among the different properties and setting their daily allowables. The system tends to be self-corrective of errors or abuses in obtaining pressures or reporting productions. It is believed this feature, together with the fact that it also tends to detect abuses, will be strong points in its practical application.

The second legal premise that must be considered is whether past inequities should be adjusted or whether to start out the new system from conditions as they now are. For purposes of illustration, the following assumptions are made:

First: That no effort will be made to adjust past drainage.

Second: That local differences in pressure will be equalized as rapidly as practicable to stop drainage between nearby properties.

Third: That pressure gradients will first be established between distant parts of the field and then uniformity in pressure be worked out gradually.

Transition Period

A change from one proration system to another inevitably entails a difficult transition period. A new system should not be instituted until adequate preparations have been made and there should follow an adjustment period to allow the properties to be brought into line with the new system without undue hardships. The following program is proposed with this in view:

First: The present system, or some temporary system, be continued until full preparation for the new one can be made.

Second: From existing bottom hole pressure data, and such additional tests as may be necessary, construct a preliminary pressure map for each of the producing horizons.

Third: From this map determine the present reservoir pressure for each property, and the average for the field.

Fourth: Determine as closely as possible the original pressure of the field. From this and the present pressures, the average pressure loss for the field and the total for each property can be calculated.

Fifth: Divide the total productions to date by the total pressure losses, to determine the production-pressure ratio (barrels produced per pound loss of pressure) for the field and for each property.

Sixth: From the average production-pressure ratio of the field, estimate the loss in pressure that will occur in the next 90-day (or other time) period in extracting oil at the fixed proration rate, and determine the percentage pressure loss below the present field average.

Seventh: In general permit each property to produce this same percentage of its present pressure during the same ensuing period, and from its production-pressure ratio already established, determine the amount of oil it may produce during that period.

Eighth: Where large local differences are found, allow the high pressure properties higher percentages and the low pressure properties lower percentages than the average until their pressures are equalized.

Field Practice

To institute the proposed system, it will first be necessary to determine the pressure-production ratios for the field and for each property. As this involves the pressure drop between two time periods, it is evident that in the beginning some tentative and temporary factors must be used. Fortunately such errors as may be incorporated in this first period will correct themselves in the following periods.

It is believed that these first tenta-

(Continued on Page 61)

First of Series of Articles on Proration Methods

In a paper presented before the Wichita meeting of the American Petroleum Institute, Division of Production, Mid-Continent Section, February 17-18, 1933, and published in The Oil and Gas Journal of February 23 the authors presented a discussion of the general principles of the feasibility of using bottom-hole pressure as a basis for proration. Because of the interest created by that preliminary paper Messrs. Lewis and Wright have prepared this article which discusses the subject upon the basis that equities between the property owners in the common source of supply are legally recognized.

In another article to be printed in The Oil and Gas Journal soon the relation of conservation to proration by bottom hole pressures will be discussed.

The reader is urged to bear in mind that many questions that will be raised by a study of this paper will be treated in more detail in the subsequent articles. The Oil and Gas Journal will be glad to print written discussions of these papers and hopes that in presenting them a contribution will be made to this general subject which is now receiving serious consideration in many of the oil producing states.

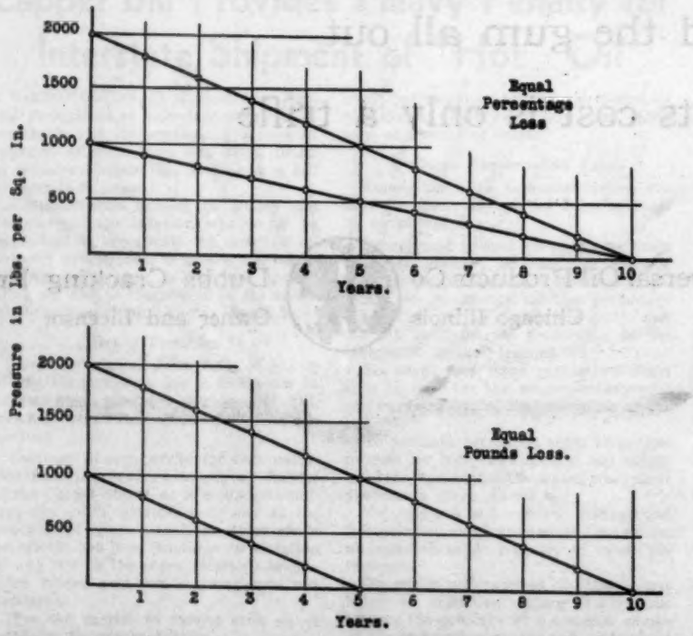


Chart illustrating comparative rate of pressure decline on equal percentage and equal pound loss basis, assuming uniform decline

*Before April meeting of Mid-Continent section, A.I.M.E., Tulsa, April 10. Authors' title is "A Plan for Proration by Pressure Control."

†A.P.I., Wichita, Kans., Feb. 17-18, 1933. Printed in The Oil and Gas Journal Feb. 23.

SHELL

Control of Drilling Fluid Is an Important Factor in Eliminating Troubles From Gas in Gulf Coast

By J. W. GRAYBEAL
Humble Oil & Refining Co., Houston, Tex.*

It is interesting to note the close relationship of pressures to the hydrostatic head of salt water in Conroe, Thompsons and Sugarland fields. This is supporting evidence of the rule applicable to Gulf Coast areas that gas pressures are roughly equal to the hydrostatic head of water for any particular depth. It is believed that gas pressures are maintained by water drive, and in that case the general run of gas pressures should be expected to be approximately equal to the hydrostatic head of the water confining them. If this is true, abnormal pressures in the Gulf Coast could occur only where shallower sands have been repressured by deeper ones through faults or similar connections. Experience in the Gulf Coast shows that this latter case is rare and that most pressures are normal, approximating the hydrostatic head of water for the well depth.

The hydrostatic head of a 9.5-pound per gallon mud is, in all cases, in excess of the gas pressures, and in most cases gives sufficient safety factor to allow safe drilling. In view of the fact that the formation pressures are normal and that a 9.5-pound per gallon mud supplies sufficient hydrostatic pressure to control them, it is obvious that the gas troubles which have developed with muds weighing 11 and 12 pounds per gallon must be due either to improper condition of the mud or to mechanical operations.

Field observations show that the majority of gas troubles are associated with round trips of the drill pipe. In most cases during normal drilling, there may have been no indication of gas trouble, but when starting out of the hole after 10 or 20 thribbles had been set back, the well would start flowing mud and threatening to blow out. All five of the disastrous blowouts in the Thompsons Field occurred while coming out of the hole.

Swabbing Action

The principal reason for these gas troubles, even with mud weights far in excess of the weight necessary to hold the gas pressure, is, undoubtedly, the swabbing action when coming out of the hole. The cohesive property of a viscous, rapid-gelling mud or its tendency to cling to the drill pipe causes a friction head to be set up which resists ready equalizing flow of mud. As a result, the hydrostatic head of the mud on the face of the gas sand is reduced by the amount of this friction head. Thus it is seen that the more viscous and rapid-gelling the mud, the greater is the disturbance of static pressure on the face of the gas sand. One of the most important factors of drilling mud control is to minimize this swabbing action, and the method used in accomplishing it is to maintain a low viscosity mud.

After this idea of low viscosities was put into operation in the field, it soon became apparent that lower weight muds could be safely carried. An outstanding example of this is shown in the development of the Thompsons Field. It was first thought that an 11-pound per gallon mud was necessary to control the Miocene gas at 3,500 feet. Later, a 10-pound per gallon mud with low viscosity being maintained with chemical treatment was tried and found sufficient. Since that time, the practice has gradually adjusted itself to using water thinning and carrying 9.5 to 9.75 pounds per gallon natural mud, and this change from a heavy viscous mud to a thin mud with less weight has been attended by safer drilling.

Definite Standard Difficult

It is difficult to set down a definite standard of the characteristics for the ideal drilling fluid made from clays. The three controlling factors of a good clay are (1) weight, (2) viscosity, (3) gelation.

The clay mud which field experience shows to most effectively meet its fundamental requirements has the following characteristics: (1) Weight varies from 9.5 to 10.5 pounds per gallon; (2) viscosity varies from 15 to 35 centipoise; (3) gelation at a moderate rate.

In drilling in the Gulf Coast the major portion of the geological section is shale, which will make a natural mud during normal drilling operations. These various shales, however, vary considerably in their capacity for making a good drilling fluid. Some of them are sandy shales containing little colloidal material, and consequently make a mud having but little body that settles rapidly. On the other extreme there are shales which are high in colloidal content which form very viscous muds usually having high rates of gelation. Neither of these two types of shale makes a drilling fluid which satisfactorily meets the above mentioned requirements. There are shales, however, which fall between these two extremes which make satisfactory mud closely approaching the characteristics of an ideal drilling fluid.

The muds made from these intermediate shales range from 9.75 to 10.5 pounds per gallon with a viscosity range of from approximately 15 to 35 centipoise. This weight is sufficient to control most of the high-pressure gas sands. The viscosity is sufficiently low to allow occluded gas to escape readily and minimize the disturbance of static pressure equilibrium at the bottom of the hole such as may be caused by a swabbing action when pulling out of the hole.

It will not gell too quickly to allow gas or air to escape or to prevent cuttings from settling in the pit, but does gell quickly enough to prevent excessive settling of cuttings in the hole. Its walling and sealing properties are satisfactory so long as the porosities to be sealed are not abnormal.

As stated before, however, some of the shales encountered frequently do not have these properties. Muds made from these may often be made to approach the above characteristics by the use of thickeners and thinners.

Thompsons Field

The history of the development of the Thompsons or Rabbs Ridge Field gives a vivid picture of the validity of the present contention that a lighter mud with low viscosity is safer for controlling gas pressures than a heavy viscous mud.

In this field a number of high-pressure gas sands occur between 3,000 feet and the top of the main pay (approximately 5,100 feet). The one offering the greatest danger to drilling operations is the Miocene gas which occurs at depths varying from 3,000 feet to 3,500 feet and is not cased off until the oil string is set at the top of the main pay. Those occurring below 3,500 feet, with the exception of the main pay, are very irregular in occurrence and are of minor importance.

During the early life of the field this Miocene gas caused five serious blowouts, four of which had to be abandoned and one a costly workover job. The mud weights on three of these wells at the time of blowout are not available, but the mud weighed 10 pounds and 11 pounds, respectively, on the last two of them. Either of these weights should have been ample protection against a blowout. It is a significant fact that all five of these blowouts occurred while coming out of the hole with the drill pipe.

Conroe Field

In the Conroe Field, which is another area of active development, gas sands occur at various depths from 1,200 feet down to the main pay at about 5,100 feet. These sands, however, exclusive of the present blowout area, have offered little trouble until a depth of about 4,500 feet is reached. Below 4,500 feet and especially around 4,900 feet to 5,000 feet are gas sands that, although their pressures are normal, have caused considerable trouble.

The reason for this is explained by the two vastly different types of mud made at Conroe. Between the surface and 4,000 feet, the natural mud made will average 10.5 pounds per gallon with a low viscosity and low rate of gelation; consequently the gas sands drilled with this mud cause no trouble. At 4,000 feet the characteristics of the mud begin to change to a mud which at weights of 9.7 and 9.8 pounds per gallon has high viscosities and a high rate of gelation. The above change in characteristics, together with the fact that an attempt has been made to carry 9.9 to 10 pounds per gallon natural mud has been fairly definitely established as the reason that these lower gas sands have given trouble.

Recent field tests show that the lower viscosities and slower gelation of this mud which can be maintained at lower weights is safer than the higher weights now being carried. The properties of this mud below 4,000 feet are such that low viscosities at weights of 9.6 and 9.7 pounds per gallon can be carried with water thinning. These weights are safe for normal Conroe drilling but do require careful control to prevent the weight fluctuating either up or down.

Summarizing drilling fluid control from the standpoint of control of gas pressures, it can be said that low viscosities with moderate rates of gelation are essential for best performances and safest drilling. By proper control of these factors, most of the gas trouble can be eliminated even with lower weight muds. In the Conroe and Thompsons natural muds which have rapid gelling characteristics, these factors reach a critical point at about 9.6 or 9.7 pounds per gallon. If weights higher than these are carried with water thinning alone, they are susceptible to gas cutting, and trouble often arises. For weights below 9.5 pounds per gallon these factors give no trouble, but the weight is too low to allow sufficient factor of safety. Therefore, this type of rapid-gelling natural mud should be controlled to weights between 9.5 and 9.6 pounds per gallon. Actual operations at Thompsons have proved this to be a safe weight, and although the Conroe practice has been to carry slightly higher weights,

(Continued on Page 57)

*Before A.P.I. Division of Production, Southwestern District, Houston meeting, April 7-8.

Completed Wells Declined in March But Number of Oil Wells Was Greater

A decline of 32 completed wells is noted in the March report of operations east of California when compared with the report for February, but there were 10 more oil wells completed, and the total initial production of the wells was greater than in the previous month. There was an increase of 28,046 bbls. in initial production.

In field work a decline of 53 in rigs up and 155 in wells drilling is noted. Drilling in the East Texas Field has been steadily declining. The big field is perhaps 90 per cent drilled up, and operations in other areas are being held back awaiting better general conditions. Some of the larger operators in the East Texas Field have reached almost the end of their drilling programs, and it is believed by some observers that when the field arrives at a pumping stage the water situation will be such as to make small lease owners hesitate in drilling additional wells, because of the operating expense. Only 74 wells were classified as drilling in Gregg, Rusk, Smith, Cherokee and Upshur Counties at the close of March and some of these were wildcat and semiwildcat tests. Completions had fallen to 28 per week in March in the five counties in which the East Texas Field is located.

SUMMARY OF ALL FIELDS
WELLS COMPLETED

	Comp.	Prod.	Dry	Gas
Eastern	69	394	14	18
Central Ohio	26	317	10	8
Lima	5	0	3	2
Indiana	14	85	3	6
Michigan	15	1,655	4	2
Kentucky	9	942	4	1
Illinois	1	8	1	0
Kansas	33	13,981	7	0
Oklahoma	80	10,198	25	6
North Central Texas	78	572	54	5
E. Central and E. Tex.	137	8,135	9	0
West Texas	18	1,116	8	0
Texas Panhandle	14	2,049	1	2
Texas Gulf Coast	164	136,151	39	1
Southwest Texas	88	6,337	53	3
La. Gulf Coast	23	5,060	15	0
North Louisiana	23	543	20	1
Arkansas	1	45	0	0
Mississippi	3	70	-2	0
Montana	3	75	0	1
Colorado	9	0	8	1
New Mexico	7	21,156	1	0
Total March	611	259,201	278	57
Total February	648	231,155	306	76
Difference	37	28,046	28	19

RIGS AND WELLS DRILLING

	Rigs	Drlg.	Ttl.
Eastern	46	115	161
Central Ohio	17	56	73
Lima	1	23	24
Indiana	2	54	56
Michigan	49	82	131
Kentucky	2	45	47
Illinois	1	11	12
Kansas	27	88	115
Oklahoma	79	280	359
North Central Texas	39	131	170
E. Central and E. Tex.	60	111	171
West Texas	16	91	107
Texas Panhandle	10	39	49
Texas Gulf Coast	27	146	173
Southwest Texas	34	153	187
Louisiana Gulf Coast	7	28	35
North Louisiana	40	102	142
Arkansas	15	28	43
Mississippi	4	14	18
Alabama	0	4	4
East Texas gas area	1	19	20
Montana	4	30	34
Utah	0	15	15
Wyoming	8	58	66
Colorado	6	57	63
New Mexico	7	58	65
Total March	493	1,838	2,330
Total February	545	1,993	2,538
Difference	52	155	208

A PROVED PRODUCT
STOPS CAVING
A NATURAL PRODUCT
PREVENTS GAS BLOWOUTS
HIGH SAFETY FACTOR
DOES NOT WEAR OUT
CASES THE HOLE
STAYS IN SUSPENSION
LOW IN VISCOSITY HIGH IN FLUIDITY
ADDS WEIGHT WITHOUT AFFECTING THE FLOW
ACTS AS A LUBRICANT
MAINTAINS ITS WEIGHT
Takes the Star Role~
OPALITE
(You'll Find a "PAL" in OPALITE)
The only known material that increases weight without affecting the flow. Opalite saves the Operator money as it enables him to make hole faster by releasing cuttings and holding up walls.
Southwest Sales Agents
BEAUMONT CEMENT SALES CO.
Beaumont, Texas
Stocks Carried in All Active Fields
CORONA PRODUCTS, INC.
Main Office and Plant—Rogers, Arkansas

Suggests Posting of Prices for Refinery Products as Solution to Problem of Tank Car Markets

By R. R. IRWIN
President, White Eagle Oil Corp.*

In my representations and suggestions from year to year I have asked the industry to abandon entirely the practice of tying any sale or contract to the trade journal listing on closed transactions—to resume the control of their own business—to sell on their own price determinations and listings. I have tried to explain the final effect of the sales practices as I saw it; this being partly an observation and partly a prediction. As proof of my conviction on the matter my company has all of these years until July last year sold every car on our own quoted or posted market. True because of the great percentage of jobbers buying goods at the trade journal prices it was necessary to consider them in our posting but we have had that much more control of our business than others in the industry.

Trade Journals

Is it necessary to point out to a single man here again how the present selling method results almost continuously in a receding price because the seller who asks a price above the trade journal listing is rare whereas those who ask less are many? Is it necessary to say again that in order to have an advancing market some companies who sell mainly on trade journal listings have to temporarily abandon their policy and join the thin list of quoters, or should I say sellers? Can this be sound—on the face of it—the adoption of a policy that frequently has to be abandoned? Can any of you be assured in your own minds that the necessary abandonment will always be forthcoming when actual conditions, costs, supply and demand justify advances? Is it not readily apparent that these two laws or effects of our policy will result at all times in an average lower tank car price than other factors—that is the crude level and the retail price—justify? I have estimated at times in the past that our tank car prices were artificially depressed continuously from one-quarter to one-half cent because of our practice. There is no way to prove this, but can there be any real argument about it, and what a cost it is? Some have argued that the range of high and low prices listed are the protection against artificial depression of the price level. Try to visualize if you can the mechanics of securing high and low price information the reasons for and sources of both the high and low quotations, the disrespect of even major companies for the average or even the low, the final effect of this disrespect translated into continuing price quotations and listings. Have you anything but chaos and artificiality? Is it necessary then to convince anyone here that our blind acceptance of trade paper prices on closed gasoline sales has a great deal to account for in the losses of the industry now going on and experienced for some time? After all the wholesale price of a commodity and the method of selling it has major control over raw material prices and retail prices. Would you not agree with me that the practices and policies of American factories in manufacturing goods and seeking outlets have had as much if not more to do with business depression than their raw material situation? American factories have mistaken outlets for consumption—they have wrecked their established outlets and their own business in their scramble for production and new outlets. Our own tank car selling policies are our effort for new outlets and our worship or fear of the buyer.

What shall we do about all of this? What has been suggested? What have you suggested? Shall we wait until something else happens to save us—as we have been doing? I mean waiting—not being saved. Shall we try to devise some new complex law of control or agreement in marketing or shall we try to give some fundamental laws of economics and human nature a little better chance to help us? Why continue to wait for something else to be brought about in the industry to mitigate the effect of a weak selling policy?

Having either failed to point out the strength of the change long advocated or the weakness of our present policies vividly enough to secure the necessary action I have naturally turned over and over the plan to find its weakness and discover reasons for nonacceptance, and may I say that I believe each time it has been up for consideration a minority has defeated it? I have studied to find other methods of selling improvement but I have continually come back to the one simple suggestion which has been urged now for six or seven years. Post your own prices for all sales. Since companies selling the most goods in tank cars exert most influence on the market, in a change of this kind the responsibility is upon them to lead and to make it effective.

It would seem that the executives of most companies know what it means to set their own prices and understand the responsibility connected with it. It is well known in the field of crude oil purchasing but in connection with undertaking it for selling refinery products it is advisable for the officers and perhaps even directors of the leading companies to study it through and adopt the policy only after complete undertaking of what it means.

The price posting must be made with the firm determination of moving all goods on that basis—unexpired contracts on other bases excepted. Sales managers and sales departments will have the very definite responsibility of determining what the market really is and what posting is required. The listing cannot be artificial. A price posting to be public information and to be consistent and sound must be listed for at least 24 hours without change. The plan of posting can be adopted by every individual company in the industry but it is probable that in the case of companies moving the smaller amount of goods they will in order to satisfy their customers have to make some gaurantee with respect to the relationship of their posting with the average of major competitors. In time, however, many small companies can have their own postings accepted as many of them do on retail prices.

Classify Gasolines

It is essential that the association keep established a system of gasoline classification to be generally accepted by the industry and used by individual companies in naming their prices. A company may have some special product that does not fall within the general classifications which they may wish to describe differently and have a special posting on it.

Now this matter of posted prices may at first seem complex but it is really simple. It is so simple that it will work. As in so many things in its very simplicity lies its effectiveness. All it means is that a company definitely sets up a price list for its products to be used by its selling force and which is subject to no change or deviation until the public posting is changed. The posting being a public matter it would be well to have copies placed on the wall in each controlling sales office.

On account of this plan being a change in the accepted order of things some of the details of putting it into effect should be discussed and agreed upon by the different members. Once accepted and used it would be more or less an individual matter. For instance one provision that should be settled is the time limit for shipment on today's posting. As hereinbefore stated on adoption of this method all goods sold either for spot shipment or for contract movement thereafter should be on the basis of the price posted. For the present at least there may be some guarantee or price limiting clause necessary in contract agreements having to do with margins since marginal protection is rather definitely fixed in the refinery selling industry. These guarantees might frequently alter the billing price but the company quotations or prices listed would be the starting point. Until such time as an individual company secured for its price postings the acceptance and respect of the trade it might be necessary to provide in its contracts that the company's posted price would not exceed the average of the posted price of major competitors.

Contract Prices

To secure recognized listing of posted prices in trade journals it would be necessary to assure the editors of trade journals of the sincerity of such posting and the full protection of the price posted. With this proper assurance the journals might list as the going markets the posted prices of four or five major companies. It might be reasonable to expect these posted listings to govern present contracts to their expiration at least subject to the averages.

Now in this discourse I have not planned to go into the subject of contracts for future deliveries but before concluding I want to emphasize with all the strength possible one major fundamental that should be recognized and used in making contracts with protection clauses, that is that the buyer should have a share however small in the loss or reduction of profits occasioned by low prices and low margins. I realize in our wholesale marketing where it has for sometime been largely a buyer's market that many companies have become convinced that they should afford almost full protection to their jobbing distributors. I am not suggesting that they alter their position radically but I am urging that they see to it that their protection clause does not provide an advantage to the buyer when subnormal and unprofitable margins exist. Whatever else is done by an individual company in its contract selling there should be no fixed protection margin at any level. This fundamental should be carried into the policy on dealer prices and discounts. Even though the graduation of protection discounts be very small it should be graduated. The strength of this graduated protection may not be immediately apparent but if it is established as a policy it is always at work.

Now all of this has been said before. I leave it with you and with it the repetition of another statement I made some years ago and that is that the fundamental plans herein described will be eventually adopted whether the industry is ready now or not.

*Annual meeting, Western Petroleum Refiners Association.

Mid-Continent Refiners Fail to Reach Agreement

(Continued from Page 23)

finers Association) gradings and specifications which would be more nearly representative of the gasolines available in the Mid-Continent territory. The committee appointed was composed of E. S. Karstedt, Continental Oil Co., chairman; R. W. McDowell, Mid-Continent Petroleum Corp.; R. C. Alden, Phillips Petroleum Co.; Emby Kaye, Skelly Oil Co.; J. J. Allinson, Lion Oil Refining Co.; Dr. E. R. Lederer, Texas Pacific Coal & Oil Co.; H. W. Camp, Empire Oil & Refining Co., and R. R. Irwin.

This afternoon at a general session, Mr. Karstedt made the report of the committee recommending the adoption of the W.P.R.A. specifications as shown in the accompanying table. For the purpose of comparison the table also shows the present government specifications for U. S. Motor and Domestic Aviation gasolines.

It will be noted that in the middle and upper brackets that the distillation range is materially lower than the lower bracket which follows the minimum U. S. Motor specifications. It is stated that most of the larger refiners have so improved their regular grades or house brands that no difficulty would be experienced in meeting these specifications. Except for the distillation range and octane requirements the remaining specifications are largely the same as required by the Government in its specifications.

Members of the committee and others emphasized the point that in the adoption of the proposed specifications a "give and take" spirit had been necessary and they asked the membership to pursue the same policy in their considerations. The proposed changes in distillation specifications, and the lack of time for full consideration proved a stumbling block in the plan for immediate approval and the opposition was able to amend a motion of approval to provide for mail ballot. Some refiners do not favor the changes in distillation specifications and others were still not satisfied as to the octane brackets.

Mail Vote

The amended motion as presented by Mr. Majewski and approved by a close vote provides that the association's membership vote on the following questions:

First. Are you in favor of adopting committee's report dealing with proposed W.P.R.A. specifications for three grades of gasoline?

Second. Are you in favor of continuing quoting and selling on present specifications and classifications as listed in present day price reporting agencies excepting that octane number is to be arrived at by the present method?

Third. Are you in favor of quoting and selling on the following setup to include U. S. Motor classification and 400 endpoint classification; specification now existent by methods now in effect excepting octane number by new motor method on brackets as follows: 59 octane and below, 60-64 and 65 and above.

The association plans to take an immediate mail vote on these questions and the answers received will probably point to a plan to which the majority of the membership will agree.

Sinclair Prairie Lets Contracts for New Line to Ship East Texas Oil

Sinclair Prairie Oil Co. has awarded the contract in two parts to take up and relay a 140-mile 12-inch pipe line to Thurman Smith Construction Co. and to Meader Whittaker.

The northern part of the line will be taken up and relaid by Meader Whittaker. It consists of approximately 67 miles of 12-inch line. The southern part of the line, about 73 miles in length, will be taken up and relaid by Thurman Smith Construction Co.

The line extends from the company's McCloud station in Pottawatomie County ,Oklahoma, to a point near Coffeyville, Kans. The pipe will be taken up and shipped to Texas and laid from the company's Colonel station, Freestone County, to its Huffman station, 26 miles north of Houston, Tex. The line will run through the Conroe Field.

The Sinclair Prairie Pipe Line Co.'s present outlet from the East Texas Field, to the Gulf Coast, is through an 8-inch looped pipe line extending direct from the East Texas Field to its Huffman station with a rated capacity of 90,000 bbls. a day. The new 12-inch pipe line will give the company an additional 90,000 bbls. a day outlet from the East Texas area.

The Sinclair Prairie Oil Co. now has 490 producing wells in the East Texas Field, with a rated potential of 158 bbls. per well per hour. The company also transports purchased oil which is contracted for by the Sinclair Prairie Oil Marketing Co.

The new 12-inch pipe line will result in additional pump stations, and in the installment of more pumping units at the existing stations along the right of way.

New Allowables in Texas as Ordered by Commission

AUSTIN, Tex., Apr. 10.—The Railroad Commission Thursday night issued new proration schedules for all Texas fields, except East Texas, the allowables totaling 541,700 bbls. The present order in East Texas calls for 400,000 bbls., bringing the State's total to 941,700 bbls. The old allowable was 927,645 bbls.

The new orders, effective 7 a. m., April 7, extend to August 1. The principal change was in the Southwest Texas area, where the allowable was increased to 61,350 bbls. It was 42,070 bbls.

The following is a comparative table indicating the changes made by the commission in the new order:

Field—	Old order	Order April 7
Panhandle	43,500	45,500
North Texas	56,000	56,000
West Central Texas	27,500	22,500
West Texas—		
Yates	60,450	60,450
Winkler	25,000	23,000
Howard-Glasscock	16,000	16,000
Ector	4,000	4,000
Crane-Upton	12,000	12,000
Reagan County	20,000	20,000
Other fields	16,900	14,700
Total	154,350	150,150
Southwest Texas—		
Darst Creek	14,090	13,000
Salt Flat	6,500	6,500
Duval County	6,755	11,900
Other fields	14,815	29,950
Total	42,070	61,350
East Central Texas—		
Van	52,450	52,590
Other fields	6,700	6,700
Total	59,150	59,290
Gulf Coast—		
Rabbs Ridge	16,500	16,500
Conroe	35,000	35,000
Raccoon Bend	4,500	4,500
Sugarland	7,500	7,500
Barbers Hill	17,890	19,800
Goose Creek	3,200	3,200
High Island	6,500	7,500
Hull	5,500	5,000
Humble	5,125	5,000
Pettus	3,800	3,800
Pierce Junction	4,700	4,700
Refugio	7,700	7,000
Spindletop	2,700	2,700
Other fields	24,750	24,750
Total	145,275	146,950
East Texas	490,000	490,000
State's total	927,645	941,700

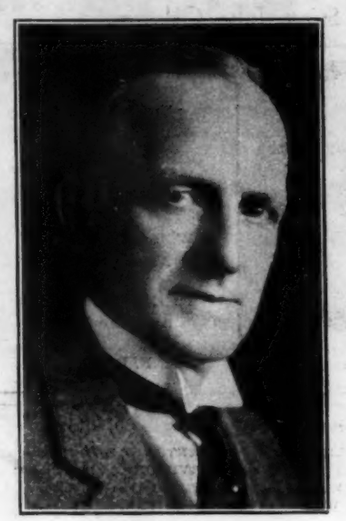
Christy Payne Succeeds S. B. Hunt as Treasurer of Standard Oil Co., (N.J.)

NEW YORK, Apr. 11.—Christy Payne has been elected treasurer of the Standard Oil Co. (New Jersey) to succeed Seth B. Hunt, retired.

Mr. Hunt has been with the Standard Oil Co. for nearly 40 years. He succeeded the late George H. Jones as treasurer.

Mr. Payne has been at the head of all the Standard Oil Co.'s natural gas interests for years, and a member of the board of directors of the Standard Oil Co. (New Jersey). He was born in Butler, Pa., February 27, 1874, graduated from the Titusville High School and Princeton University and entered the employ of the National Transit Co. in 1895 as a bookkeeper.

Mr. Payne read law with the late Mortimer F. Elliott, and was admitted to the bar. His first connection with the natural gas business was as secretary and counsel for the Peoples Natural Gas Co. in 1903. He was elected to similar offices for the Hope Natural Gas Co. and allied companies in 1906, and made a director of all the companies. In 1920 Mr. Payne was elected president of the Peoples Natural Gas Co., a position which had been held by his father, the late Calvin N. Payne. In 1926 he was chosen president of the Hope Natural Gas Co. Since that time he has occupied the pre-eminent position in all of the parent company's natural gas corporations.



CHRISTY PAYNE

Late Fields

KANSAS

The potential production of the Voshell Pool in McPherson County shows approximately a 36 per cent decline on the 48-hour test taken on April 5 to 7. The first 24 hours' production was 13,790 bbls. and the second was 13,112 bbls., giving the field a potential of 13,470 bbls. The previous potential taken last November was 19,583 bbls., making the decline 6,113 bbls.

The Derby Oil Co.'s No. 1 Schmidt, SE cor. SW NW Section 17-22-3w, Harvey County, swabbed 75 bbls. of oil an hour making 1,800 bbls. the first 24 hours. It is the first offset to be completed in the new extension area a mile north of production in the Hollow Field, where the discovery well made 1,650 bbls.

Shell Petroleum Corp.'s No. 1 Voth, SW cor. NW Section 4-22-3w, in Mabee Pool, in McPherson County, sawbbed 451 bbls. of oil the first eight hours and is estimated at 2,000 bbls. a day from the Hunton lime at 3,499-3,506 feet.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Apr. 11.—Humble Oil & Refining Co.'s No. 1 Imogene Hall, a wildcat 1 mile southwest of nearest production in the Pettus Field in Bee County, at 2,700 feet is 22 feet in well saturated oil sand at top of Jackson and a sand not found in any of the tests in the Pettus Field.

W. V. Ballard's No. 1 San Antonio Irrigated Farms, a few miles southwest of San Antonio, at 1,017 feet is slopping oil over the top of the casing. It is several miles from production and looks like a probable new shallow pool from Taylor marl.

William B. Stewart's No. 1 Duval County Ranch Co. in Survey 362, northwest of the North Government Wells Pool in Duval County, bailed dry in tubing and is pulling liner to wash and take another core. It showed no water.

Jacqua & Crow's No. 1 Hagist in southern McMullen County which failed to get a good drill stem test at 2,370-80 feet has set casing and will test. The lower part of the 10 feet of sand looked good.

OKLAHOMA

Sinclair Prairie Oil Co.'s No. 1 Jerome, SW cor. Section 15-20-2w, east of production in the Wentz Pool, Noble County, found the Viola lime from 5,148-55 feet, with a showing of oil The 8-inch casing will be landed at 5,155 feet. The test found Misener sand from 5,105-19 feet with nothing showing. If the well makes a commercial producer it will extend the production in the area 1½ miles east.

The Denver Producing & Refining Co.'s No. 1 Noe, NW cor. SW SW Section 34-10-10w, a wildcat in northern Caddo County, was drilling at 7,500 feet on the last report.

Production in the Olive Pool, in Creek County, was extended a half mile south when F. L. Marrs and others' No. 1 Wilson, NE cor. Section 34-18-8, started flowing at the rate of 15 bbls. an hour from the pay at 1,280-96 feet. Two offsets will be forced by this completion. J. E. Crosbie is starting a test in the SW cor. Section 26-18-8, and The Texas Company's No. 1 Hine, SE cor. Section 27-18-8.

The Deep Rock Oil Corp., which has a 2-inch pipe line from the Olive area to its refinery at Cushing is planning to enlarge this pipe line to a 4-inch line.

New Texas Bill Proposes to Cut Marginal Wells

AUSTIN, Tex., Apr. 10.—Rep. A. G. Walker of Vernon has introduced a bill cutting down the marginal well production limits fixed by the legislature for pumping wells to exclude them from proration. His bill is designed to meet the objections of Atty. Gen. James V. Allred that the commission could not prorate flowing wells below the old 40-bbl. limit for marginal wells.

The bill leaves a top classification of 35 bbls. for marginal wells over 8,000 feet deep on university land in Reagan County. The marginal well scale of daily production, in barrels, proposed follows: Wells to 2,000 feet, 10 bbls.; 2,000-4,000 feet, 20 bbls.; 4,000-6,000 feet, 25 bbls.; 6,000-8,000 feet, 30 bbls.; over 8,000 feet, 35 bbls.

The present scale is: Wells to 2,000 feet, 10 bbls.; 2,000 to 3,500 feet, 20 bbls.; over 3,500 feet, 40 bbls.

NEW PRORATION OFFICIALS

The Corporation Commission of Oklahoma on Tuesday appointed the following officials, under the newly enacted proration law: Umpire, Carl Giles, Norman; assistant umpire, Crockett Scribner, Pauls Valley; attorney, Edwin Dabney.

Many Expected to Attend Oil Equipment Exposition

The Oil Equipment and Engineering Exposition for 1933 will be held in Houston, Tex., from May 22 to 28, inclusive. Men from the various oil-producing sections of the United States and from many foreign countries are expected. Tools, machinery and materials for every branch of the petroleum industry will be on display in Convention Hall including the latest equipment and newest methods developed for the drilling, production, refining, pipe line, natural gas and gasoline and the marketing divisions. The show will be under the management of E. G. Lenzner.

The Convention Hall building is a large airy, well-lighted structure with concrete floor, and a very high ceiling, making it suitable for large oil equipment. It has a total exhibiting area of more than 58,000 square feet of floor space which can be increased by the removal of certain seat structures. The building is only five blocks from the downtown offices of numerous oil companies. Ample parking facilities are available.

Trucks may drive into the building with any of the equipment and unload it directly into the exhibitor's booth. Drilling and pumping equipment may be bolted or fastened directly to the concrete floor. Equipment too large for convenient display within the building will be set up on the outside area that immediately adjoins it. On this outside space will be given demonstrations of tools and machinery.

Technical and association meetings will be held while the exposition is in progress. At these the latest methods of operation will be discussed.

Equipment on display will come from many parts of the United States and several exhibits of a technical nature will be shipped in from other countries. Among the latter will be devices developed for research and exploration work, for safety in the field and the refineries, and for assistance in carrying out engineering study.

Plans are under way for airplane transportation from Maracaibo, Venezuela, to Houston and return so that an entire week can be spent at the exposition; and the entire time in making the trip will consume less than 15 days. Representatives of foreign oil companies are now in various parts of the country and some of these men will make their headquarters in Houston while the oil show is being held.

Fines and Imprisonment for Proration Violators

(Continued from Page 24)

The umpire and his force are given full police powers.

No expense incurred in carrying out the provisions of any section of this act shall be paid out of the general fund of the State of Okahoma.

A proration fund shall be created consisting of moneys that may be payable to such fund by law, out of which all salaries and expenses incident to the administration of proration shall be paid. The fund will be kept by the state treasurer.

The expense of administering the proration law will be paid by Oklahoma oil producers who will be subjected to a tax of one-eighth of 1 cent per barrel of oil produced, the proceeds of which will be paid into the proration fund provided by the new proration act.

NEW YORK DISCONTINUES TAX

NEW YORK, Apr. 10.—By a vote of 72 to 60, a bill to continue for another year the additional 1-cent per gallon emergency tax on gasoline was defeated in the assembly in Albany. The bill was sent back to committee and will come up shortly for reconsideration. If the assembly maintains its position the gasoline in New York State will return to 2 cents per gallon.

The Oil and Gas Journal

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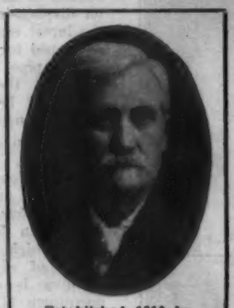

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Rising Hopes

If it's not one thing it's another in the oil business. Just when there are rising hopes for some sort of stabilization in Oklahoma City and East Texas the industry is thrown into consternation by a presidential recommendation for divorcing pipe lines from their integrated companies.

That phase is discussed elsewhere in this issue. Aside from that threat of dismemberment the industry has increasing reason to hope for better conditions, through pending developments.

The passing of a new proration law with teeth in it by the Oklahoma legislature and its approval by Governor Murray was a distinct stimulus. Effectively enforced, and the machinery to be set up provides means to that end, the new law is described as a model enactment.

It will provide a weapon for holding production to whatever limit is necessary. It will provide a remedy for the wasteful dissipation of gas accompanying unregulated production which has been so markedly reflected in reduced well pressures that even the guilty have become righteous minded and convinced of the necessity of lowering the gas-oil ratio. The small operators are now seeing the advantage in the use of tubing which reduces the quantity of gas needed for the extraction of oil.

The better feeling which has been brought about in Oklahoma is just beginning in East Texas where the situation is still clouded by doubt both in the legislature and in the field.

The bill for the creation of a new oil and gas commission to take the place of the railroad commission is still with the Texas legislature.

Friends of the present commission point to their election by the people as giving them preference over a new appointive body. This is an argument whose only weight is political and the political bearing is further involved in naming of new commissioners if the law is passed.

One of the sidelights is the report that the reason even the bitterest opponents of regulation closed their wells during the last shutdown was that they did not want the present commission ousted.

But there was a more compelling condition in the fact that the market was glutted with "hot oil", a fact so stubborn that not even the most persistent overproducers could ignore it.

Latest reports say the commission is going ahead taking potentials under direction of the Federal court preparatory to framing a new order. The original order contemplating a two hour test of all the wells in the field was rescinded when it was realized how impracticable and wasteful such a test of nearly 10,000 wells would be.

Now only certain key wells, selected to be representative of the areas in which they are located, are to be tested, the rest of the field to be shut in until April 21 to allow for drafting of a new order.

If this order is based only on potential it may fall under the ban of the Federal court as a per well basis order. It is suggested that it may be based on relative potential of producing properties which indirectly would apply the acreage factor and be in line with the new law in Oklahoma.

Which course may be taken, if either, remains to be seen as does the question whether this commission or a new one will draft the next order. Meanwhile, the shutdown will offset to some extent the recent overproduction which has congested outlets until demurrage on stalled tank cars ate up the price of the hot oil.

The encouraging feature is the seeming certainty that there will be a showdown one way or another shortly, either by a new commission or through the present commission being obliged to issue an order that will stand in court.

The protracted backing and filling and getting nowhere which has been the bane of East Texas for so long cannot continue indefinitely.

East Texas will have to be brought into line or take the consequences of being drowned in its own cheap oil. There could be no profit even in hot oil at the price it may fall to.

The "hot oil" twin—tax evasion—remains. Reports of East Texas gasoline being transported by truck 500 miles and sold in the Texas Panhandle indicates very clearly that profit on such shipment is not found in cut-price crude but through evasion of the gasoline tax.

The minimum economic distance for shipment of crude by truck is 200 miles. Beyond that it is not an advantage but an excessive expense.

This link between "hot oil" and tax evasion brands them as double racketeers and deprives them of all claim to consideration. It is a natural evolution of the sort of mind which insists upon selfish interest first regardless of the effect on his fellows.

Disregard for the interests of others soon degenerates into violation of the rights of others. It is only what might be expected. It makes all the more necessary the enforcement of law for the protection of the common interests.

Kansas has taken such a step in establishing ports of entry on its borders through which all out-of-state gasoline must enter. If gasoline tax evasion is to be stamped out, as it must be if the oil industry is not to be run by racketeers, it must be by just such firm determination in outlawing it in practice as well as by letter.

The states, as The Oil and Gas Journal pointed out in the original article warning of the growth of this racket, are losers through these smuggling tactics as well as the oil industry. Kansas is now taking active steps to protect itself. Other states should do likewise.

Kansas production of crude, by the way, is not holding up as expected earlier. Some of the potentials have been proved excessive and some of the older fields, like Voshell, are now producing about their maximum.

With Kansas and Oklahoma no longer threatening the market the situation is still up to Texas. East Texas operators, generally, want to do the right thing but they, as well as all the producers in the rest of Texas, Oklahoma and Kansas, and indeed throughout the industry, are being made to suffer from the greed of a mere handful.

How long are right thinking Texans going to put up with this? The sentiment in the legislature for the creation of a new commission shows a hopeful awakening to the situation. There is dire need there as elsewhere for the collection of state revenue and the amount being lost through gasoline tax evasion is too large to be ignored.

What the gasoline tax evader puts into his pocket comes out of the pockets of the other taxpayers.

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Kerosene and Distillate Continue Only Products in Oklahoma Market With Active Demand

By C. O. WILLSON

Kerosenes and distillates continued to be the only active products in the Oklahoma (Group 3) refinery tank car market over the past week. The same market situation applied to all refining centers in the Mid-Continent and Middle West.

In the case of distillates, the higher gravity grades of light straw and prime white color were the most active, reversing the situation in the winter when the lower gravity grades of low cold test and low flash were in greatest demand. Prices in Oklahoma on the 38-40 and 39-41 prime white grades were fractionally higher the first of the week.

These distillates are being used both as fuels for heating and tractor fuels. The furnace oil demand has held up better than expected and this fact coupled with the spring demand for tractor fuels explains the steady movement of kerosene and distillates to the agricultural sections extending from the rice fields of the south to the hard grain areas of the northern states.

Those in a position to know state that more and more farmers are being educated to the use of special distillates in place of gasoline or kerosene for their tractors and other type engines used in farm work. Some of the larger distributors introduced the tractor distillates with house brand names starting several years ago and there has been a gradual widening in consumer acceptance since. In many cases the sales of these distillates exceed kerosene at this season of the year. Although there is less than one-half cent per gallon difference in the tank car prices for the better grades of distillates and kerosene at this time, in deliveries to consumers some distributors allow a 2-cent differential per gallon in tank wagon deliveries. Where the same performance is guaranteed as tractor fuel or burning oil, the buyers naturally favor the lower priced distillates over the kerosenes. Aside from the tractor fuel outlets there is a growing demand for the best grades of distillates for household heating in specially designed stoves suitable for heating and cooking in homes not served by gas and similar fuels. Those who have investigated this development are confident that the market for distillates will continue to be enlarged for small stoves in addition to the furnace oil demand. Another favorable market factor for the distillates has been the action of the railroads, which on April 1 started shipping on the fuel oil rather than the refined oil rates. This amounts to a saving varying from one-eighth to one-fourth cent per gallon in the delivered cost of the distillates. This lower rate does not apply in cases where the distillates are used as motor fuels. For that use the distillates continue to take the refined oil rate which applies to gasoline and kerosene. This change in rail rates is being reflected in the demand for 32-36 gravity gas oil used as furnace oil. There was a strong demand for this grade during the winter months, due in part to the fact that it was shipped on the fuel oil rates, but with the shift in the demand for the higher gravity grades the demand has eased for the gas oil grades and prices are slightly lower for the 32-36, zero, low flash material.

Gasolines Continue Slow

There were no important changes in prices for refinery gasolines and natural gasolines. The shutting down of the East Texas and Oklahoma City Fields, the sources of supply for the cheapest gasoline, has not stimulated demand. Most of the local refineries in those fields had sufficient crude storage to continue operation. The Oklahoma City Field is scheduled to reopen on a new proration basis this week backed by a new law and new supervision. Just what effect, if any, this will have on the crude supplies of local refiners and others outside the field will not be known for several days.

Several in close touch with this development are optimistic that the crude oil market in Oklahoma and Kansas will tighten materially in the near future. They base their conclusions on the belief that the production of the Oklahoma City Field will be materially restricted in order to conserve gas and that "hot" oil will cease to be a market factor due to the rigid enforcement of proration rulings made possible by the new state law. In Kansas the crude situation has changed due to the fact that it is now known that the supposedly large potential production in new fields does not exist. Added to this development is the fact that the demand for crude oil in that

Refined Market Barometer

Gasoline tank car quotations at refineries were holding fairly well in all parts of the United States the first of the week, with some refining centers optimistic that an improved crude oil situation, coupled with a seasonal gain in consumption, would form the basis for an upturn in motor fuel quotations. Spot trading in both refinery and natural gasolines continues dull. Kerosene and tractor fuels are in active demand in all refining centers serving agricultural sections and in some areas tank car and wholesale prices have been advanced. Little change was reported in residual fuel oils and gas oils, except Gulf Coast where bunker grades were advanced. Cylinder stock prices were reduced at several points with other lubricants slow. Paraffin wax unchanged.

Mid-Continent—Kerosene and high gravity distillates strong and prices higher when changes were made. No changes in refinery and natural gasolines with little improvement in demand. Industrial fuels and gas oils weak. Bright stock prices lower.

East Coast—Better tone to market for heavy oils due to expected decrease in domestic and foreign supplies. Better feeling in gasoline market. Good demand for kerosene at firm prices. Reductions in some grades of steam refined and bright stocks. Wax inactive.

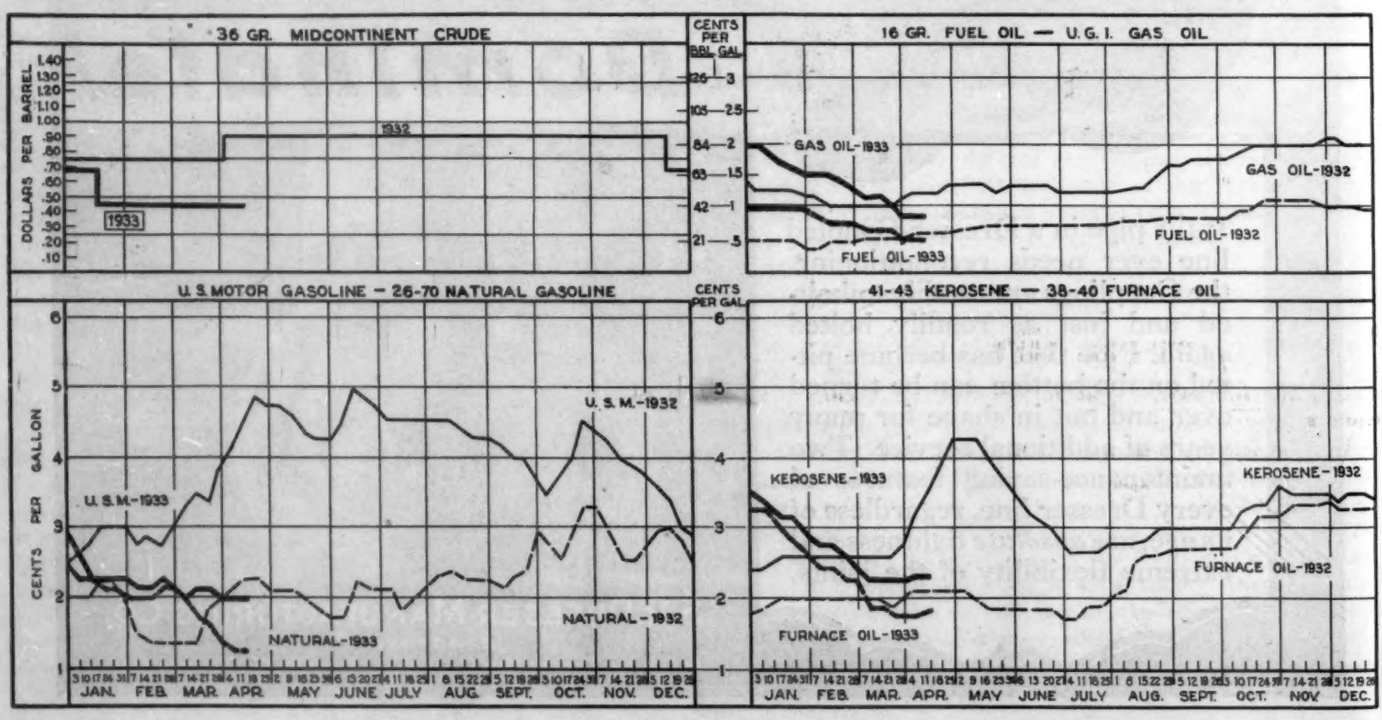
Pennsylvania—Bright stock prices lower. Cylinder stocks weak. Good movement of kerosene.

Chicago—Spot movement of gasolines continues slow. Expect early advance in special naphthas. Kerosene active. Better demand for wax.

Gulf Coast—Gasoline and fuel oil market stronger with advance of 10 cents in bunker grade. Other products unchanged.

California—Gasoline demand improving with prices unchanged. Many inquiries for kerosene. Good demand for distillates.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



State has increased due to the construction of new refineries.

The East Texas situation, around which the entire Mid-Continent market centers, is as much unsettled as it ever was and as long as that condition continues, improvement in Oklahoma and Kansas is of minor importance from the marketing angle. Due to that fact most tank car buyers and sellers of gasolines in Oklahoma expect prices to continue around their present levels for the immediate future. The latest developments in East Texas and the efforts being made to correct unsatisfactory conditions are explained elsewhere in this issue.

Statistical Situation

The accompanying table covering the high points in the Mid-Continent statistical situation at refineries was prepared from the Bureau of Mines report for February which became available the first of the week. It gives a summary of conditions effective March 1 compared with the same date last year. In making comparisons on production of refinery products it is necessary to keep in mind that February this year had 28 days while February, 1932, was a 29-day month.

Probably the most significant development revealed in the data is the reduction in percentage yield of gasoline from crude oil runs to stills instead of the usual yearly increase.

Thus, as one operator pointed out last week, even if the quality of the gasoline was not improved by lowering the end-points, his company would nevertheless pursue that policy in order to reduce yields of that product and make more kerosene and distillate available. In the manufacturing operation this situation has significance in that there is less incentive to carry on cracking operations to the point that all stocks available are cracked. For instance many refiners are not using as much recycle stock in their cracking operations this fraction being added to the furnace oil cuts and they also are not taking as wide a cut from their crude oil in securing cracking stocks.

Stocks Less

In the accompanying table this situation is reflected in the data which show that with approximately the same crude runs to stills, the production of distillate and gas oil jumped from 808,000 bbls. in February, 1932, to 1,116,000 bbls. in February of this year. Kerosene production declined due largely to the fact that the price differentials between kerosene and distillate have been so narrow that refiners were not justified in incurring the additional expense necessary to produce finished kerosenes from the distillates.

It will be noted that stocks of both kerosene and distillate and gas oil were substantially lower on the last day of February this year and same date in 1932. This explains the tight market at this time which prevails throughout the Mid-Continent despite the demoralized crude oil and gasoline markets.

The situation in regard to the residual fuel oils has not been as favorable as that of gas oil and distillate. This market bears a closer relationship to gasoline than it does to kerosene and distillate and lack of industrial activity continues to restrict the outlets. The present statistical situation in the Mid-Continent is not unfavorable and could quickly improve with any increase in industrial demand.

Gasoline Yields Less

This reduction in gasoline yields will be a surprise to many who are familiar with the fact that several refiners have enlarged and improved their cracking facilities and are in a position to increase their gasoline output. The most important reason for this change in trend of refinery operations lies in market conditions. The average refiner has been faced with two conditions which necessarily have been reflected in his plant operations. In the first place the race to increase octane ratings of gasoline has not ended and many refiners have been more interested in adding two to five points to the octane rating of their finished gasolines than they have in adding the same percentage to their gasoline yields. Lowering the endpoint of gasoline is one of the effective methods used in increasing antiknock values of motor fuels. In improving the quality of their gasolines many refiners have not hesitated to go from a 430 endpoint product to as low as 390 on the regular domestic grades. This naturally has materially reduced yields of straightrun and cracked gasolines at many plants.

This trend based on gasoline quality has been furthered by the change in relative prices received for the several refinery products. As previously explained there is now and has been over the past six months a favorable market for kerosene and distillates. This in effect has meant that refiners could lower the endpoint of their gasolines and then add the heavier ends to their kerosenes and distillates with little or no sacrifice in returns per barrel of crude oil refined. In fact at this time the prices for the 41 to 44 gravity grades of kerosene are the same as prevailing market for the regular or premium grades of gasoline in Oklahoma. For the prime white and straw color distillate many refiners are securing the going market for the third grade gasoline.

In the case of lubricating oils and wax, Mid-Continent refiners are making progress in reducing their output in line with a decreasing demand. Lubricating oil stocks on hand February 28 were less than the year before and in the case of paraffin wax they were approximately 40 per cent less.

Prices

Published prices on refinery gasolines for Oklahoma in this issue are the same as a week ago and the principal grades of natural gasoline also are unchanged. In the case of natural gasolines there has been a little more spot buying but in general the open market buying of all products used as motor fuels is slow for this season of the year.

The 39-41 prime white distillate has advanced to a low of 1⅞ cents in Oklahoma with several sales reported at 2 and 2⅛ cents. The 38-40 grade is also one-eighth cent higher. Kerosenes are strong at the price ranges prevailing a week ago. Low endpoint grades are bringing the top of the market from most sellers.

High gravity fuel oils varying from 26 to 32 gravity are from 5 to 10 cents per barrel lower. The demand for these products is less active and more material is being offered. Gas oil prices are unchanged with little new business.

Several manufacturers in Oklahoma again reduced their bright stock prices following reports of reductions in Pennsylvania. The zero to 10 grade of 150-160 viscosity was reduced to a low of 12¼ cents in Oklahoma with the possibility there will be additional reductions to meet the Pennsylvania competition.

Anglo-American Now Sells Products Direct to Users

NEW YORK, Apr. 10.—The Anglo-American Oil Co., Ltd., British marketing subsidiary of the Standard Oil Co. (New Jersey), has started the sale of both gasoline and lubricating oil direct to commercial consumers, following the practice adopted by other major marketers in the United Kingdom.

As a result of this trend away from the jobbing trade, independent wholesale oil dealers in England are reported to be considering a plan for the organization of one large centralized lubricating oil selling agency, operating on a national scale, in which the independent jobbing trade would participate.

The plan of the independents contemplates the adoption of a brand for the central selling group, and a national advertising and marketing campaign in competition with the brands of the major companies. The blending and packing of this oil would be handled by the central federation.

*Mid-Continent Refinery Operations, February, 1933 and 1932. Data in Barrels. Stocks at End of Month at Refineries Only

	Daily crude runs to stills	Gasoline		Kerosene		Gas oil-distillate		Fuel oils		Lubricants		Pet. wax (lbs.)	
		Output	Stocks	Output	Stocks	Output	Stocks	Output	Stocks	Output	Stocks	Output	Stocks
February, 1933													
Okla., Kans., Mo.	231,142	3,631,000	4,248,000	434,000	339,000	631,000	974,000	1,337,000	2,186,000	149,000	663,000	1,960,000	2,893,000
Texas Inland	140,428	2,084,000	1,796,000	194,000	83,000	387,000	337,000	1,151,000	2,522,000	21,000	91,000	280,000	50,000
Ark.-La. Inland	57,892	643,000	261,000	69,000	25,000	198,000	138,000	524,000	566,000	7,000	10,000	.....	.....
Total Mid-Continent	429,462	6,358,000	6,305,000	697,000	447,000	1,116,000	1,449,000	3,062,000	5,274,000	177,000	764,000	2,240,000	2,943,000
February, 1932													
Okla., Kans., Mo.	239,928	3,820,000	4,170,000	482,000	451,000	562,000	1,591,000	1,322,000	2,097,000	214,000	810,000	2,520,000	4,476,000
Texas Inland	138,714	2,451,000	2,085,000	218,000	126,000	136,000	594,000	1,243,000	3,078,000	21,000	74,000	280,000	295,000
Ark.-La. Inland	45,642	598,000	181,000	55,000	21,000	110,000	101,000	433,000	582,000	17,000	40,000	.....	.....
Total Mid-Continent	424,284	6,869,000	6,436,000	755,000	598,000	808,000	2,286,000	2,998,000	5,757,000	252,000	924,000	2,800,000	4,681,000

*Derived from Bureau of Mines report.

American Petroleum Institute Weekly Refinery Statistics

Figures below reported for week by American Petroleum Institute. (1) Per cent refinery capacity represented. (2) Daily average crude runs to stills. (3) Total motor fuel stocks. (4) Gas oil and fuel oil stocks. All figures in 42-gallon barrels.

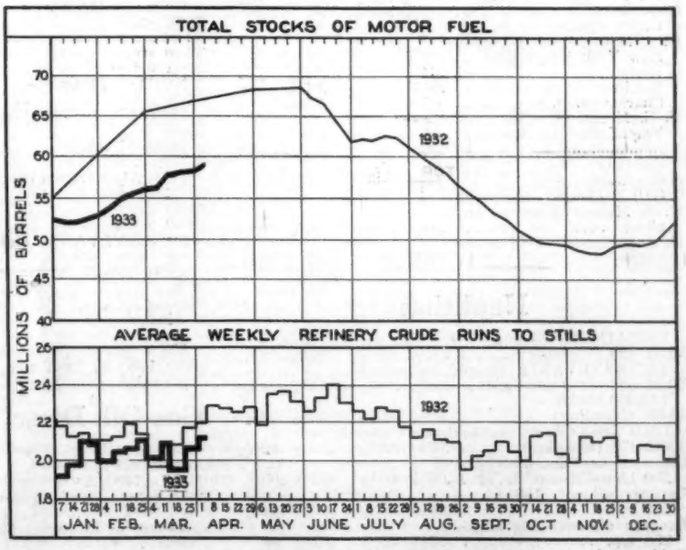
Week Ending April 8, 1933, Compared to Week Ago

	Week ending April 8				Week ending April 1			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	99.1	402,000	16,078,000	5,882,000	99.1	466,000	15,942,000	6,058,000
Appalachian	95.0	64,000	2,005,000	861,000	95.1	71,000	1,996,000	851,900
Ind., Ill., Ky.	97.5	296,000	8,891,000	3,460,000	97.5	313,000	8,803,000	3,438,000
Okla., Kans., Mo.	84.9	198,000	5,462,000	2,957,000	84.9	204,000	5,582,000	3,037,000
Inland Texas	56.4	78,000	1,671,000	2,132,000	56.4	74,069	1,692,000	2,163,000
Tex. Gulf	97.7	393,000	6,066,000	6,261,900	97.7	396,000	6,546,000	6,283,000
La. Gulf	97.3	87,000	1,941,000	2,064,000	97.3	101,000	1,832,000	2,198,000
N. La. and Ark.	85.5	39,000	386,000	655,000	88.5	32,000	292,000	646,000
Rocky Mtn.	90.8	26,000	1,485,000	635,000	90.8	24,000	1,532,000	620,000
California	94.6	430,000	14,545,000	98,387,000	94.6	440,000	14,387,000	98,524,000
Total U. S.	91.6	2,013,000	58,440,000	123,294,000	91.6	2,121,000	59,104,000	123,823,000

Total motor fuel stocks, Bureau of Mines basis, 59,440,000 bbls.

Week Ending April 8, 1933, Compared to Year Ago

	Week ending April 8				Week Ending April 9, 1932			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	99.1	402,000	16,078,000	5,882,000	100.0	447,700	7,295,000	5,454,000
Appalachian	95.0	64,000	2,005,000	861,000	91.8	84,100	1,861,000	1,082,000
Ind., Ill., Ky.	97.5	296,000	8,891,000	3,460,000	98.9	321,600	6,858,000	4,137,000
Okla., Kans., Mo.	84.9	198,000	5,462,000	2,957,000	89.6	238,100	3,976,000	3,050,000
Inland Texas	56.4	78,000	1,671,000	2,132,000	....	114,700	1,500,000	2,654,000
Tex. Gulf	97.7	393,000	6,066,000	6,261,900	99.8	401,600	7,016,000	5,920,000
La. Gulf	97.3	87,000	1,941,000	2,064,000	100.0	50,700	1,773,000	3,727,000
N. La. and Ark.	85.5	39,000	386,000	655,000	....	120,000	127,000	660,000
Rocky Mtn.	90.8	26,000	1,485,000	635,000	89.4	31,300	1,986,000	631,000
California	94.6	430,000	14,545,000	98,387,000	96.7	483,300	14,929,000	96,206,000
Total U. S.	91.6	2,013,000	58,440,000	123,294,000	95.1	2,293,100	47,171,000	123,521,000



Data based on weekly reports of American Petroleum Institute. Figures for week just ended not shown in graph but are included in accompanying table

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

EXCLUSIVE OF TAXES

The following quotations are exclusive of the Federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils, which became effective June 21, 1932.

Refinery Gasolines

OKLAHOMA (Group 3)—	Apr. 11		Apr. 4	
*U. S. Motor grades:				
Regular	.02¼	.02½	.02¼	.02½
Premium	.02½	.02⅝	.02½	.02⅝
Third grade	.02	.02¼	.02	.02¼
60-62 400 grades:				
Regular	.02⅜		.02⅜	
Premium	.02⅝		.02⅝	
Third grade	.02¼		.02¼	
64-66 390	.02¼	.02½	.02¼	.02½
64-66 375	.02⅜	.02⅝	.02⅜	.02⅝
68-70 350	.02⅝	.02¾	.02⅝	.02¾
NORTH TEXAS—				
U. S. Motor grades:				
Regular	.02¼	.02⅜	.02¼	.02⅜
Premium	.02½	.02¾	.02½	.02¾
Third grade	.02	.02¼	.02	.02¼
60-62 400	.02¼	.02½	.02¼	.02½
64-66 390	.02¼	.02½	.02¼	.02½
64-66 375	.02⅜	.02½	.02¼	.02⅝
64-66 360	.02⅝	.02⅞	.02⅝	.02⅞
†NORTH LOUISIANA—				
U. S. Motor grades:				
Regular	.02¾		.02¾	
Premium	.03		.03	
Third grade	.02½		.02½	
60-62 400	.02⅝	.02¾	.02⅝	.02¾
†ARKANSAS—				
U. S. Motor grades:				
Regular	.02⅝		.02⅝	
Premium	.02¾	.03	.02¾	.03
Third grade	.02⅝	.02½	.02⅝	.02½
CHICAGO (Based on Oklahoma Group 3)—				
U. S. Motor grades:				
Regular	.02¼	.02½	.02¼	.02½
Premium	.02½	.02¾	.02½	.02¾
Third grade	.02	.02¼	.02	.02¼
60-62 400	.02½	.02¾	.02½	.02¾
64-66 375	.02⅜	.02⅝	.02⅜	.02⅝
68-70 360	.02⅝	.02⅞	.02⅝	.02⅞
Aviation fighting grade	.03⅛	.03⅜	.03⅛	.03⅜

*Octane Ratings—The following octane ratings apply to the three grades of U. S. Motor gasoline: Regular, 57-65 octane number; premium, above 65 octane number; third grade, below 57 octane number.

†For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
U. S. Motor	.04½	.04¾	.04½	.04¾
60-62 400	.04⅝	.04⅞	.04⅝	.04⅞
64-66 375	.05	.05⅛	.05	.05¼
68-70 350	.05⅛	.05¼	.05¼	
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.04½	.05¾	.04½	.05½
58-60 400	.05¼	.06½	.05	.06
EAST COAST—				
U. S. Motor, below 65 octane:				
New York (Bayonne)	.04¾		.04¾	
Boston	.04¾		.04¾	
Baltimore	.04¾		.04¾	
Charleston, S. C.	.05½		.05½	
U. S. Motor, 65 octane and above:				
New York (Bayonne)	.05		.05	
Boston	.05		.05	
Baltimore, Md.	.05		.05	
Charleston, S. C.	.05¾		.05¼	
GULF COAST (domestic)—				
U. S. Motor, 65 octane and above	.04	.04¼	.03¾	.04
U. S. Motor, below 65 octane number	.03½	.04	.03	.03¼

Naphthas

OKLAHOMA (Group 3)—	Apr. 11		Apr. 4	
50-52 450 (blending)	.02⅛	.02¼	.02⅛	.02¼
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.04¼	.04⅜	.04¼	.04⅜
†ARKANSAS—				
48-50 (blending)	.02¼	.02½	.02¼	.02½
CHICAGO (Based on Oklahoma Group 3)—				
50-52 450 (blending)	.02	.02¼	.02	.02¼
Cleaners' naphtha, 56-58 gr., 200 i.b.p.-320 e.p.	.05¼	.05½	.05¼	.05½
Lacquer diluent, 180 i.b.p.-250 e.p.	.06½	.06¾	.06½	.06¾
Lacquer diluent, 140 i.b.p.-200 e.p.	.07½	.08	.07½	.08
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.05¼	.05½	.05¼	.05½
Stoddard solvent, 300 i.b.p.-410 e.p., over 100° flash	.04¾	.05	.04¾	.05
Pet. thinner, 290, 300 i.b.p.-415 e.p., over 83° flash	.04	.04¼	.04	.04¼
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.05	.05¼	.05	.05¼
Petroleum spirits	.03⅞	.04	.03⅞	.04

Natural Gasolines

OKLAHOMA (Group 3)—	Apr. 11		Apr. 4	
Grade 18-55	.01⅝	.01¾	.01⅝	.01¾
Grade 26-70	.01¼		.01¼	
Grade 30-70	.01¼		.01¼	
*Low pressure grades:				
15 lb. v.p. (max.)	.01⅞	.02⅛	.02	.02¼
11 lb. v.p. (max.)	.02¼	.02⅜	.02¼	.02⅜
NORTH TEXAS—				
Grade 18-55	.01⅝		.01⅝	
Grade 26-70	.01¼		.01¼	
Grade 30-70	.01¼		.01¼	
*Low vapor pressure grades:				
15 lb. v.p. (max.)	.01⅞	.02⅛	.02	.02⅛
11 lb. v.p. (max.)	.02¼	.02⅜	.02¼	.02⅜
NORTH LOUISIANA—				
Grade 26-70	.01½		.01½	
CALIFORNIA—				
75-78 375	.03½	.04	.03½	.04

Kerosenes

(All kerosenes water white)

OKLAHOMA (Group 3)—	Apr. 11		Apr. 4	
41-43	.02⅝	.02½	.02⅝	.02½
42-44	.02½	.02⅝	.02½	.02⅝
NORTH TEXAS—				
40-41	.02¼		.02¼	
41-43	.02⅝		.02⅝	
†NORTH LOUISIANA—				
41-43	.02¾		.02¾	
42-44	.03		.03	
†ARKANSAS—				
41-43	.02¾		.02¾	
PENNSYLVANIA (inland refineries)—				
45	.04½	.04¾	.04½	.04¾
46	.04½	.04¾	.04½	.04¾
47	.04¾	.05	.04¾	.05
CHICAGO (Based on Oklahoma Group 3)—				
41-43	.02⅝	.02⅝	.02¼	.02½
42-44	.02½	.02¾	.02⅝	.02⅝
*CALIFORNIA—				
38-40 high burning test	.03½	.04½	.03½	.04½
NEW YORK (Bayonne, N. J.)—				
41-43	.05¼		.05¼	
GULF COAST (domestic)—				
41-43 water white	.04	.04¼	.04	.04¼

*For Pacific Coast consumption.

†For Arkansas, Louisiana and Mississippi delivery.

Furnace Oils and Tractor Fuels

OKLAHOMA (Group 3)—	Apr. 11		Apr. 4	
32-36 straw	.01¾	.01⅞	.01⅞	.02⅛
36-38 straw	.01¾	.01⅞	.01¾	.01⅞
38-40 straw	.01¾	.01⅞	.01¾	.01⅞
39-41 prime	.01⅞	.02	.01¾	.02
NORTH TEXAS—				
38-40 straw	.01¾	.01⅞	.01¾	.01⅞
†NORTH LOUISIANA—				
36-40	.02½	.02¾	.02½	.02¾
†ARKANSAS—				
32-36	.02½	.02⅝	.02½	.02⅝
CHICAGO (Based on Oklahoma Group 3)—				
32-36 straw	.01⅞	.02	.01¾	.01⅞
38-40 straw	.01⅞	.02	.01¾	.01⅞
38-40 prime white	.01⅞	.02⅛	.01¾	.01⅞
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.03¼	.03½	.03¼	.03½
NEW YORK (Bayonne, N. J.)—				
32-36	.04		.04	
36-40	.05		.05	
21 (industrial)	.03½		.03½	

Above prices are for distillate oils of zero cold test under 190° F. flash and good odor.

†For Arkansas, Louisiana and Mississippi delivery.

Gas Oil, Diesel Oil and Fuel Oil

Gas oil (G.O.) quoted per gallon basis; Diesel oil and fuel oil per barrel.

OKLAHOMA (Group 3)—	Apr. 11		Apr. 4	
32-36 (G.O.) cracking stock	.00⅞	.01	.00⅞	.01
U.G.I. (G.O.)	.00⅞	.01	.00⅞	.01
32-36 zero to 15 (G.O.) high flash	.01⅝	.01½	.01⅝	.01½
28-30, zero to 10	.60	.65	.65	.75
26-30, zero to 10	.50	.60	.55	.65
24-26	.35	.40	.35	.40
20-22	.32½	.35	.32½	.35
Below 16	.30	.35	.30	.35
NORTH TEXAS—				
32-36 (G.O.) industrial	.00⅞	.01	.00⅞	.01
22-26	.35	.40	.35	.40
Below 20	.30	.35	.30	.35
†NORTH LOUISIANA—				
32-36 (G.O.) zero	.02½		.02½	
14-16	.30	.35	.30	.35
†ARKANSAS—				
30-32 (G.O.) zero	.02¼	.02½	.02¼	.02½
14-16	.30	.35	.30	.35
CHICAGO (Based on Oklahoma Group 3)—				
32-36 (G.O.) industrial	.01	.01⅛	.00⅞	.01⅛
28-30 (zero)	.70	.75	.70	.75
26-28 (zero)	.60	.65	.60	.65
22-26 (zero)	.47½	.52½	.47½	.52½
18-22 (zero)	.42½	.45	.42½	.45
Below 18	.37½	.40	.37½	.40
PENNSYLVANIA (inland refineries)—				
36-40	.03¼	.03½	.03	

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all areas than shown in above tables.

†For Arkansas, Louisiana and Mississippi delivery.

CALIFORNIA—				
30-34 (G.O.) per bbl.	.80	.90	.80	.90
27 plus Diesel	.80	.90	.80	.90
15-19 bunker (at tidewater)	.50	.60	.50	.60
15-19 (cargo lots)	.45	.55	.45	.55
15-19 (tank cars)	.35	.50	.35	.50
GULF COAST—				
28-30 (G.O.)	.03	.03¼	.03	.03¼
28-30 Diesel	1.50		1.50	
Bunker C (bulk cargoes)	.57½	.60	.50	
Bunker C (bunkers)	.70		.60	
NEW YORK (Bayonne, N. J.)—				
28 plus (G.O.)	.04		.04	
*28-30 Diesel	1.65		1.65	
28-30 Diesel (tank cars)	.04		.04	
†Bunker C	.70	.75	.70	.75

*Lighterage 6½ cents per barrel.

†Lighterage 5 cents per barrel, contract price at New York harbor to ocean-going steamships only.

Petroleum Coke*

Prices per ton f.o.b. refineries in Chicago area.

Breeze (screenings)	4.50	4.50
Still runs	5.50	5.50
Lump and egg	6.50	6.50

*Refineries will absorb freight to 80 cents a ton.

Neutral Oils

(Viscosity at 100° F. and color)

OKLAHOMA (Group 3)—	Apr. 11		Apr. 4	
Zero to 10 Cold Test:				
150-3	.06¼	.06½	.06¼	.06½
180-3	.07¼	.07⅝	.07¼	.07⅝
180-4	.07	.07¼	.07	.07¼
200-3	.08	.08¼	.08	.08¼
200-4	.07⅝	.08	.07⅝	.08
240-3	.10	.10¼	.10	.10¼
240-4	.09⅝	.10	.09⅝	.10
280-3	.11	.11¼	.11	.11¼
280-4	.10½	.10¾	.10½	.10¾
300-315	.11¼	.11½	.11¼	.11½
350-375	.11¾	.12	.11¾	.12
400-4	.12¼	.12½	.12¼	.12½
500-415	.13	.13¼	.13	.13¼
100-2 paraffin oil	.04¼	.04½	.04¼	.04½
15-30 Cold Test:				
200-3	.07¼	.07½	.07¼	.07½
200-4	.07	.07¼	.07	.07¼
240-3	.09¼	.09½	.09¼	.09½
240-4	.09	.09¼	.09	.09¼
280-3	.10¼	.19½	.10¼	.10½
280-4	.10	.10¼	.10	.10¼
PENNSYLVANIA—				
150 vis., No. 3, 400-405:				
Zero pour test	.10¼	.10¾	.10¼	.10¾
10 pour test	.10½	.10¾	.10½	.10¾
15 pour test	.08½	.09	.08½	.09
25 pour test	.07¾	.08	.07¾	.08
180 vis., No. 3, 25 pour test	.10½	.11	.10½	.11
200 vis., No. 3:				
Zero pour test	.14¾	.15¼	.14¾	.15¼
10 pour test	.14	.14½	.14	.14½
15 pour test	.12¾	.13¼	.12¾	.13¼
25 pour test	.12¼	.12½	.12¼	.12½
GULF COAST—				
Pale Oils:				
100-2-2½	.05¼	.05½	.05¼	.05½
200-3	.06½		.06½	

300-3	.07¼	.07½	.07¼	.07½
500-3½	.09¼	.09½	.09¼	.09½
750-3½	.10¼	.10½	.10¼	.10½
1,200-3½	.12½		.12½	
2,000-4	.13½	.14	.13½	.14
Red Oils:				
200-5-6	.05¼	.05½	.05¼	.05½
300-5-6	.06½	.06¾	.06½	.06¾
500-5-6	.07½	.07¾	.07½	.07¾
1,200-5-6	.10½	.11	.10½	.11
2,000-6 plus	.12¼	.12½	.12¼	.12½
CALIFORNIA—				
Pale Oils:				
100-2½-3	.09	.10	.09	.10
200-2½-3	.10	.11	.10	.11
300-3-3½	.11	.11½	.11	.11½
350-3-4	.11½	.11¾	.11½	.11¾
400-3-4	.11¾	.12	.11¾	.12
450-3-4	.12	.12¼	.12	.12¼
550-3-4	.12¼	.12¾	.12¼	.12¾
Red Oils:				
200-4-5	.08¾	.09¾	.08¾	.09¾
300-5-6	.10	.10½	.10	.10½
350-5-6	.10½	.11	.10½	.11
400-5-6	.11	.11½	.11	.11½
450-5-6	.11½	.11¾	.11½	.11¾
500-5-6	.11¾	.12	.11¾	.12
600-5-6½	.12	.12¼	.12	.12¼
700-6½ plus	.12¼	.12½	.12¼	.12½
750-6½ plus	.12½	.12¾	.12½	.12¾
900-6½ plus	.13	.14½	.13	.14½

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Apr. 11		Apr. 4	
630 light green	.06	.07	.06	.07
600 light green S.R.	.04	.05	.04	.05
600 dark green S.R.	.03	.04	.03	.04
Bright Stocks:				
190-200 D	.14	.15	.14	.15
150-160 D, 0-10	.12¼	.12½	.13	
150-160 D, 10-25	.11¾	.12	.12¼	
150-160 D, 25-40	.11¼		.11¾	
150-160 E	.11¼		.11¾	
PENNSYLVANIA—				
600 S.R.	.07¼	.07¾	.07¼	.08
650 S.R.	.10¼	.11	.10¼	.11
600 Pennsylvania flash	.11½	.12	.11½	.12
630 D filtered	.16½	.17	.16½	.17
600 E filtered	.12	.12¼	.12	.12¼
Pennsylvania Grade bright stock:				
Bright Stock, No. 8 color, 145-50 vis.				
210-540-550 flash:				
10 pour test	.18	.18½	.18½	.19
15 pour test	.15½	.16	.16½	.17
25 pour test	.15	.15½	.15½	.16

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Apr. 11		Apr. 4	
124-126 white crude scale	.01⅝	.01¾	.01⅝	.01¾
PENNSYLVANIA—				
122-124	.02		.02	
124-126	.02⅛	.02¼	.02⅛	.02¼
NEW YORK (Bayonne, N. J.)—				
120-122	.02½		.02½	
125-127	.02¾		.02¾	
130-132	.03⅛		.03⅛	
133-135	.04		.04	
135-137	.04⅛		.04⅛	
CHICAGO (F.O.B. switching district)*—				
122-124	.0330	.0340	.0330	.0340
125-127	.0355	.0365	.0355	.0365
127-129	.0370	.0380	.0370	.0380
130-132	.0430	.0440	.0430	.0440
132-134	.0455	.0465	.0455	.0465

Add 3° F. for a.m.p.

*Cents per pound on carlot orders in cotton lined burlap bags of 225 lbs. approx. Corrected prices for April 4.

NEW YORK—

Petroleum in barrels in carload lots:

Dark green	.01⅞	.01⅞
Amber	.02	.02
Extra amber	.02⅜	.02⅜
Lily white	.05½	.05½
Snow white	.06½	.06½
Cream	.04½	.04½

Export Prices

GASOLINE

GULF COAST—	Apr. 11		Apr. 4	
U. S. Motor	.03¼	.03½	.03½	
60-62 400	.03⅝		.03⅝	
61-63 390	.03⅝		.03⅝	
64-66 375	.03⅝	.03¾	.03¾	.03⅞
LOS ANGELES, CALIF.—				
U. S. Motor, 53-55 437 e.p.	.03¾	.04¼	.03¾	.04¼
U. S. Motor, 65 octane num.	.04½	.04¾	.04½	.04¾
U. S. Motor, 67 octane num.	.05		.05	
U. S. Motor, 69 octane num.	.05¼		.05¼	
58-60 400 endpoint gasoline	.04¼	.05	.04¼	.05

KEROSENE

GULF COAST—				
41-43 prime white	.04		.04	
41 water white	.04⅛	.04¼	.04⅛	.04¼
LOS ANGELES, CALIF.—				
41-43 water white	.03¾	.04¼	.03¾	.04¼

LUBRICANTS

NEW YORK, (f.a.s. in bbls.)—				
600 Warren E	.17½		.18	
600 S.R. unfiltered	.13½		.14	.15
650 S.R. unfiltered	.16		.16½	
600 flash S.R.	.17		.18	
630 flash S.R.	.22		.23	
Bright stock, No. 8 color	.22½		.23½	
Bright stock, No. 6½ color, dil.	.21½		.22½	

NEUTRALS

NEW YORK—Pale Engine Oil, Bulk (vis. at 100)—		
230-3¾	.09¾	.09¾
180-3¼	.09½	.09½
100-2¼	.05	.05
Red Engine Oil, Bulk (vis. at 100):		
300-6½	.09½	.09½
250-6	.08½	.08½
200-6	.07¾	.07¾

Crude Oil Prices

Oklahoma, Kansas, North and East Central Texas

East Texas (see note) ..... $ .50
Corsicana, heavy (Jan. 20, 1933)* ..... .30
Other fields ..... See gravity table

East Texas posted by Tide Water Oil Co., January 18; Sinclair Prairie Oil Marketing Co., January 18; The Texas Company, January 20; Magnolia Petroleum Co., January 20; Shell Petroleum Corp., January 19; Panola Pipe Line Co., January 20; Humble Oil & Refining Co., January 20.
*Magnolia Petroleum Co.

West Texas

Iatan and Westbrook..Same as North Texas
Crane, Upton, Crockett, Howard, Glasscock, Mitchell, Ector, Winkler and Pecos Counties ..... See note below
Lea County, N. Mex. ..... See Rocky Mountain table
Teborg, Pecos County* ..... $ .40
Jones and Fisher Counties ..... See gravity table

Note—Crane, Upton, etc., effective January 19 by The Texas Company, 30 cents; followed by Humble Oil & Refining Co., Magnolia Petroleum Co., Gulf Pipe Line Co., on January 20, and by other purchasers.
*Shell Petroleum Corp., January 19, 1933.

Texas Panhandle

Gray County, Wheeler County and Carson-Hutchinson Counties ..... See gravity table

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers. ..... See gravity table
Jennings, La. (Jan. 20, 1933)* ..... $ .35
Cameron Meadows, La. (Jan. 20, 1933)† ..... Below 20 gravity 22 cents, differential 2 cents per degree beginning with 21-21.9 at 26 cents with 40 gravity and over at 52 cents.
Refugio, light ..... See gravity table
Refugio, heavy (Jan. 20, 1933)‡ ..... .45
Markham§ ..... See Gulf Coast gravity schedule
High Island ..... See Gulf Coast gravity schedule
Conroe ..... See note

*Gulf Refining Co. †Magnolia Petroleum Co. ‡Humble Oil & Refining Co. §The Texas Company. ¶Yount Lee Pipe Line Co.

Note—In the Conroe Field, effective January 19, Tide Water Oil Co. posted as follows: 35-35.9 degrees, 59 cents, with 1 cent added for each degree upward to 40 degrees and over, at 64 cents; January 20, Humble Oil & Refining Co. posted 35-35.9 degrees, 54 cents, with 2 cents added for each degree upward to 40 degrees and over at 64 cents. The Texas Company met Humble Oil & Refining Co. prices on March 6.

South Central and Southwest Texas

Darst Creek ..... See note below
Luling (Jan. 20, 1933) ..... $ .30
Miranda (Jan. 20, 1933) ..... .35
Pettus (Jan. 20, 1933) ..... .55
Salt Flat (Jan. 20, 1933) ..... .40
Lytton Springs (Jan. 20, 1933) ..... .45
Duval County (March 6, 1933) ..... .35
Saxet (March 6, 1933) ..... .45

Note—The Texas Company, January 19, followed by Humble Oil & Refining Co., Magnolia Petroleum Co. and Gulf Pipe Line Co., January 20. Magnolia Petroleum Co. in Luling; Magnolia, Humble and Gulf companies in Refugio crude; Humble and Gulf companies in Pettus; Humble and Gulf companies in Salt Flat; Magnolia Petroleum Co. in Lytton Springs. In Darst Creek, effective January 19, The Texas Company, 35 cents; effective January 20, Magnolia Petroleum Co., 35 cents; Humble Oil & Refining Co., 40 cents; Gulf Pipe Line Co., 40 cents. Duval and Saxet posted by The Texas Company.

North Louisiana and Arkansas

Smackover, Ark. (all grades) ..... See note below
Urania, La. (Jan. 20, 1933) ..... $ .25
East El Dorado, Ark. (Jan. 20, 1933) ..... See note below
Other fields ..... See gravity table

Note—Smackover, all grades, effective January 19 by The Texas Company, 30 cents; January 20, Standard Oil Co. of Louisiana, 20 cents, Magnolia Petroleum Co. 20 cents, Gulf Refining Co. 30 cents; Louisiana Oil Refining Corp., 25 cents. Urania Field posted by Louisiana Oil Refining Co. and H. L. Hunt, Inc., East El Dorado, effective January 20, Magnolia Petroleum Co. 20 cents, Gulf Refining Co. 30 cents.

Eastern States

JOSEPH SEEP PURCHASING AGENCY
(Effective January 21, 1933)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field) $1.47
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.17
Penna Grade Oil in Eureka Pipe Line Lines 1.12
Penna Grade Oil in Buckeye Pipe Line Lines ..... .97
Corning Grade Oil in Buckeye Pipe Line Co.'s line (Jan. 20, 1933) ..... .70
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Jan. 10, 1931) ..... .60

PENNZOIL CO.
(Effective January 21, 1933)

Pennsylvania Grade Oil in National Transit Lines:
Group A $1.42
Includes Cochran, Franklin, Hamilton and Doolittle districts.
Group B 1.41
Includes Titusville district.
Group C 1.40
Includes Turkey and Tidioute districts.
Group D 1.39
Includes Bear Creek and Porkey districts.
Group E 1.37
Includes Eldenau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jamison, Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts.
Price depends on length of pipe line haul to plant at Oil City.

TIDE WATER PIPE CO.
(Effective January 21, 1933)

Bradford, Pa. $1.47
Allegany, N. Y. 1.47

PURE OIL CO.
(Effective January 21, 1933)

Cabin Creek, W. Va. $1.12
Bradford Hollow, W. Va. 1.12
Kelly's Creek, W. Va. 1.12

Rocky Mountain States

OHIO OIL CO.-STANOLIND OIL & GAS CO.
Ilex, light (Jan. 18, 1933) ..... $ .40
Ilex, heavy (Jan. 18, 1933) ..... .34

(Continued on Page 46)

Crude Oil Gravity Table

Degrees of gravity—	Kansas, Oklahoma, North Texas, Central Texas, East Central Texas 1	North Louisiana and Arkansas 2	North Louisiana and Arkansas 3	Gray County, Texas 4	Carson, Hutchinson and Moore Counties, Texas 5	Gulf Coast, Texas and Louisiana 6	Gulf Coast, Texas and Louisiana 7	Salt Creek, Wyoming 8
Below 20	....	....	....	....	....	$.45	$.32	....
20-20.9	....	....	....	....	....	.45	.34	....
21-21.9	....	....	....	....	....	.45	.36	....
22-22.9	....	....	....	....	....	.46	.38	....
23-23.9	....	....	....	....	....	.47	.40	....
24-24.9	....	....	....	....	....	.48	.42	....
Below 25	....	....	....	....	....	....	....	....
25-25.9	....	....	....	....	....	.49	.44	....
26-26.9	....	....	....	....	....	.50	.46	....
27-27.9	....	....	....	....	....	.51	.48	....
28-28.9	....	....	....	....	....	.52	.50	....
Below 29	$.28	$.28	$.20	....	....	....	....	$.28
29-29.9	.30	.30	.22	....	....	.53	.52	.30
30-30.9	.32	.32	.24	....	....	.54	.54	.32
31-31.9	.34	.34	.26	....	....	.55	.56	.34
32-32.9	.36	.36	.28	....	....	.56	.58	.36
33-33.9	.38	.38	.30	....	....	.57	.60	.38
34-34.9	.40	.40	.32	....	....	.58	.62	.40
35-35.9	.42	.42	.34	$.30	$.20	.59	.62	.42
36-36.9	.44	.44	.36	.32	.22	.60	.62	.44
37-37.9	.46	.46	.38	.34	.24	.61	.62	.46
38-38.9	.48	.48	.40	.36	.26	.62	.62	.48
39-39.9	.50	.50	.42	.38	.28	.63	.62	.50
40 and over	.52	.52	.44	.40	.30	.64	.62	.52

Note—Effective January 20, the Standard Oil Co. of Louisiana posted the following prices in North Louisiana and Arkansas: Caddo, below 29 gravity, 20 cents; 40 gravity and above, 44 cents. Sabine and De Soto, below 29 gravity, 25 cents; 40 gravity and above, 49 cents. Homer, below 29 gravity, 28 cents; 40 gravity and above, 52 cents. Sarepta and Cartersville, below 29 gravity, 17 cents; 40 gravity and above, 41 cents. El Dorado, below 29 gravity, 25 cents; 40 gravity and above, 49 cents. Haynesville, below 29 gravity, 19 cents; 40 gravity and above, 43 cents. The above all carry 2 cents differential for each degree in gravity. Smackover, all grades, 20 cents.

Column 1—Effective January 18, Stanolind Crude Oil Purchasing Co., Sinclair Prairie Oil Marketing Co.; January 19, The Texas Company; January 20, Magnolia Petroleum Co. (starting at below 25 degrees, 20 cents, with 2 cents added for each degree upward); January 20, Carter Oil Co. in Oklahoma and Kansas and Humble Oil & Refining Co. in North Central and East Central Texas; January 20, Gypsy Oil Co. in Oklahoma and Kansas and Gulf Production Co. in North, Central and East Central Texas; January 18, Globe Oil & Refining Co. and Tide Water Oil Co. in Kansas and Oklahoma; January 19, Empire Pipe Line Co., Shell Petroleum Corp.; January 18, in Oklahoma, Deep Rock Oil & Refining Co., Barnsdall Refineries, Inc., Continental Oil Co., Bell Oil & Gas Co., Tide Water Oil Co., Champlin Refining Co., Anderson-Prichard Corp., Cushing Refining Co., Eason Oil Co., Johnson Oil Refining Co., Mid-Continent Petroleum Corp., Pepper Gasoline Co., Sunray Oil Co., Yale Oil Corp., Twin State Oil Co., Rock Island Refining Co.; January 20, Philtex Oil Co. and Pure Oil Co.; Oklahoma and North Texas, January 18, Continental Oil Co.; Kansas, January 18, Eldorado Refining Co., Vickers Petroleum Co., Skelly Oil Co. (starting below 25 degrees, 20 cents, with 2 cents added for each degree upward); January 19, White Eagle Oil Corp. Effective March 1 Derby Oil & Refining Co. posted in Kansas as follows: Below 29 degrees 28 cents, with 2 cents added for each degree up to 40.9, inclusive, at 52 cents; 41-41.9 degrees, 56 cents; 42 degrees and above, 60 cents. In the Stratman and Stoltenberg Pools, 52 cents flat.

Column 2—The Texas Company, January 19; Louisiana Oil Refining Co., January 20; Gulf Refining Co., January 20 (starting at below 25 degrees, 20 cents, with 2 cents added for each degree upward). For Standard Oil Co. of Louisiana schedule see note below price table.

Column 3—Magnolia Petroleum Co., January 20.

Column 4—Effective February 28, 1933, Humble Oil & Refining Co. Effective January 20, Phil Tex Oil Co. Effective March 6, The Texas Company. March 7, Magnolia Petroleum Co.

Column 5—Effective February 28, 1933, Humble Oil & Refining Co. Effective January 20, Phil Tex Oil Co. Effective February 28, Continental Oil Co. Effective March 6, The Texas Company. March 7 by Magnolia Petroleum Co.

Column 6—Effective March 6, 1933, The Texas Company.

Column 7—The Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Sun Oil Co., January 20.

Column 8—Stanolind Oil & Gas Co., January 18.

(California Crude Oil Prices on Page 46)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

April 11, 1933

Taxes

The gasoline quotations given in the following tables include the 1-cent Federal tax as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third or competitive grade is generally available at 1.5 or more cents per gallon under the service station price for the regular grade. Ethyl Gasolines are sold 3 cents above the service station price for the regular grade.

Southern District

STANDARD OIL CO (KENTUCKY)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Atlanta, Ga.	20.0	20.0	7.0	11.0
Augusta	20.0	20.0	7.0	11.0
Macon	20.0	20.0	7.0	10.0
Savannah	20.0	20.0	7.0	12.5
Birm'ham, Ala.	21.0	21.0	8.0	13.0
Mobile	19.0	19.0	8.0	8.0
Montgomery	22.0	22.0	8.0	14.0
Jackson, Miss.	16.0	16.0	7.0	12.0
Vicksburg	18.0	18.0	7.0	12.0
Jack'ville, Fla.	19.0	19.0	8.0	9.5
Miami	21.0	21.0	8.0	13.5
Pensacola	20.0	20.0	8.0	14.0
Tampa	20.0	20.0	8.0	13.0
Lexington, Ky.	18.5	18.5	6.0	10.0
Covington	18.0	18.0	6.0	11.5
Louisville	18.0	18.0	6.0	10.0
Paducah	19.0	19.0	6.0	9.0

A third grade "Kyso Green" is sold at a price generally 3 cents below the price on the regular grade.

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 3 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline. To Pensacola, Montgomery and Birmingham state taxes add 1-cent tax. To Mobile state tax add 1-cent city tax. Dealers receive discount of 3 cents off tank wagon price throughout territory.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Dallas, Tex.	12.5	15.0	5.0	7.0
Fort Worth	12.5	15.0	5.0	7.0
Houston	12.5	15.0	5.0	8.0
San Antonio	12.5	16.0	5.0	8.0
El Paso	12.5	15.0	5.0	8.0
Texarkana	*14.0	14.0	5.0	†11.0
Muskogee, Ok.	9.5	12.0	5.0	6.0
Okla. City	11.5	14.0	5.0	8.0
Tulsa	12.5	*15.0	5.0	8.0
Ft. Smith, Ark.	*13.5	13.5	5.0	†10.0
Little Rock	14.5	14.5	7.0	†10.0

*Less 2½ cents to dealers. †Less 3 cents to dealers.

Standard Oil Co. (Indiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Chicago	14.1	14.1	4.0	8.0
Decatur, Ill.	15.6	15.6	4.0	10.1
E. St. Louis	14.9	12.9	4.0	9.3
Joliet	15.6	14.6	4.0	8.6
Peoria	15.6	15.6	4.0	10.1
Quincy	15.4	14.4	4.0	7.5
Davenport, Ia.	15.7	15.7	4.0	10 4
Des Moines	15.7	15.7	4.0	8.0
Mason City	15.7	15.7	4.0	9.0
Sioux City	15.3	15.3	4.0	10 0
Duluth, Minn.	16.7	16.7	4 0	11.0
Mankato	16.3	16.3	4.0	8.1
Minneapolis	14.4	14 4	4.0	11.0
LaCrosse, Wis.	17.4	17.4	5.0	11 1
Green Bay	16.8	16.8	5.0	10.5
Milwaukee	16.3	16.3	5 0	10.0
Madison	16.5	16.5	5 0	10.2
Detroit, Mich.	15.0	15.0	4.0	8.0
Grand Rapids	15.5	15.5	4.0	8 0
Saginaw	15.3	15.3	4.0	10 3
Evansville, Ind.	16.2	13.0	5.0	†13.9
Indianapolis	16.4	16 4	5.0	†14.1
South Bend	16.7	16.7	5.0	†14.4
Fargo, N. D.	18.1	18.1	4.0	13 0
Huron, S. D.	17.5	17 5	5 0	10 0
Sioux Falls	17.0	17.0	5.0	10 0
K. C., Mo.*	14.1	14.1	4 0	7.0
Springfield*	15.0	15 0	4 0	8 0
St. Louis	13.0	11.5	3.5	9 4
St. Joseph*	13.0	10.9	4 0	7.5
Wichita, Kans.	13 9	13.9	4 0	7 0
Bartlesville, Ok.	13.5	15.0	5.0	8.0

*State tax 3 cents, 1-cent city tax and 1-cent Federal tax.

†Includes 4-cent tax. Buyers of kerosene not used as motor fuel can secure refund of tax.

Effective November 4, 1933—New dump discount applicable on all grades of gasoline sold from tank wagon. Any tank wagon customer buying 25 gallons or more at one time will be given 1-cent discount per gallon off tank wagon price at time of delivery. Customers not under contract receive no other discount.

Effective January 1, 1933—Discounts on Q.D.A. on 500 gallons or more per month throughout territory; Red Crown Ethyl Gasoline, 3 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price. On deliveries of 75,000 gallons or more each classification allowed 1 cent additional discount.

Discounts on resellers authorised agent's agreement; Same amounts as above except made off service station price instead of tank wagon price.

Stanolind Furnace Oil in Chicago

Effective November 1, 1932, prices f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. zero), 100 gallons or more, 7 cents; No. 2 (36-34 stw. zero), 100 gallons or more, 6¼ cents; No. 3 (32-26 zero), 400 gallons or more 5.75 cents; No. 4 (12-16 zero), 400 gallons or more each 4.75 cents. Viscosity of No. 4, 90-115 at 100° F.

Fuel Oils

Associated Distributors Prices

Spot market prices on 350 gallons or over deliveries, and top prices on contracts, respectively: 38-40, 7 and 8 cents; 32-36 light, 6¾ and 7¾ cents; 32-36 dark, 6¼ and 7¼ cents; 28-30, 5¾ and 6¾ cents; 24-6, 4¾ and 5¾ cents; 18-22, 4¼ and 5¼ cents. On deliveries of less than 350 gallons the spot price is one-half cent higher.

Naphtha

	Tank Wagon	Car
Oleum spirits	10.7	6.23
V.M.&P. naphtha	12.7	7.23
Cleaners' naphtha	13.0	9.23
Stanisol	18.2	9.23

Tank wagon prices f.o.b. Chicago, January 6, 1932. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Denver, Colo.	14.0	17.0	5.0	12.5
Grand Junc'n	18.0	21.0	5.0	14.5
Casper, Wyo.	16.0	19.0	5.0	10.0
Cheyenne	14.0	17.0	5.0	11.5
Butte, Mont.	20 0	23 0	6 0	17.0
Billings	21.0	24.0	6 0	15.5
Great Falls	21.0	23.0	6.0	17.0
Helena	21.0	24 0	6 0	17.0
Salt Lake, Utah	16.0	19.0	5.0	16.0
Albu'que, N. M.	14.0	17.0	*7.0	12.0
Boise, Idaho	18.5	21.5	6.0	18.0
Twin Falls	20 5	23 5	6.0	18.0

*One-cent city tax.

Central South District

STANDARD OIL CO. (LOUISIANA)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
N. Orleans, La.	15.5	15.5	*7 0	†11.0
Baton Rouge	15.0	15.0	6.0	†10 0
Alexandria	14.0	14.0	7.0	†8.5
Lafayette	15.0	15.0	7 0	†10.0
Lake Charles	15.0	15.0	7.0	†10 0
Shreveport	14.0	14.0	6 0	†11.0
Knoxville, Tenn.	19.5	19.5	8.0	12.5
Memphis	18.0	18.0	8.0	10.0
Chattanooga	19.0	19.0	8.0	12.0
Nashville	19.0	19.0	8 0	10 0
Bristol	18.2	18.0	8.0	13.0
Lt. Rock, Ark.	15.5	15.5	8 0	10.0

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

Two-cent discount off kerosene tank wagon price and 2½ cents off gasoline tank wagon price to dealer and commercial accounts.

Nebraska

STANDARD OIL CO. (NEBRASKA)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Omaha	16.3	17.3	5.0	9.0
McCook	17.0	17.0	5.0	8.5
Norfolk	16.3	17.3	5.0	10.75
N. Platte	17.0	17.0	5.0	9.0
Scottsbluff	17.0	17.0	5.0	9.5

Note — Dealers' discount allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off normal service station price; Nebraska Blue (third grade), 1 cent off normal service station price.

Ohio

STANDARD OIL CO. (OHIO)*

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Ohio points	15.5	†16.0	5.0	*12.0

*Two cents off on gasoline tank wagon to dealers and commercial accounts; 2½ cents off tank wagon and kerosene to dealers. †One-cent discount for cash sales.

New York and Part of New England District

STANDARD OIL CO. (NEW YORK)*

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Albany, N. Y.	14.0	15.0	4.0	9.0
New York	13.5	13.5	4.0	8.0
Buffalo	13.5	14.5	4.0	9.0
Rochester	14.5	15.5	4.0	9.0
Syracuse	15.0	16.0	4.0	9 5
Boston, Mass.	15.0	15.0	4.0	8.0
Augusta, Me.	18.0	19.0	5.0	9.0
Manch'tr, N. H.	17.5	18.5	5.0	8.0
Burlington, Vt.	18.0	19.0	5.0	8.5

*Discount schedule to commercial accounts are as follows: At service stations, 1 cent per gallon; tank wagon deliveries up to 20,000 gallons monthly, 2 cents per gallon; 20,000 to 100,000 gallons, 2½ cents; 100,000 to 300,000 gallons, 3 cents; 300,000 gallons and up, 3½ cents.

Atlantic Coast District

STANDARD OIL CO. (NEW JERSEY)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Atl'tic. City, N.J.	14.0	15.0	4.0	11.3
Newark	12.9	12.9	4.0	8.5
Annapolis, Md.	14.6	15.6	5.0	9.0
Baltimore	14.0	15.0	5.0	8.0
Cumberland	15.5	16.5	5.0	11.7
Wash'g'n, D. C.	12.2	13.2	3.0	10.0
Danville, Va.	16.7	17.7	6.0	10.9
Norfolk	15.1	16.1	6.0	10.3
Petersburg	16 2	17.2	6.0	11.4
Richmond	15.5	16.5	6.0	10.7
Roanoke	16.7	17.7	6.0	11.0
Charl'n, W. Va.	15.4	16.4	5.0	11.6
Parkersburg	14.0	15.0	5.0	10.2
Wheeling	15.0	16.0	5.0	11.2
Charlotte, N. C.	17.3	18.3	7.0	12.5
Hickory	18.5	19.5	7.0	13.7
Mt. Airy	18.4	19.4	7.0	12.8
Raleigh	18.1	19.1	7.0	12.3
Salisbury	18.0	19.0	7.0	12.6
Charleston, S.C.	16.1	17.1	7.0	10 3
Columbia	18.0	19.0	7.0	12.2
Spartanburg	15.0	16.0	7.0	12.5

Two cents per gallon discount off tank wagon price of gasoline to dealers except Washington, D. C., and Baltimore, Md., where discount is 3 cents. Kerosene 1 cent off tank wagon for 25 gallons or more under contract except New Jersey.

Canada

IMPERIAL OIL, LTD.

Imperial 3-Star Gasoline

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Hamilton, Ont.	23.5	25.5	6 0	15.5
Toronto, Ont.	23.5	25.5	6 0	15 5
Brandon, Man.	29 0	32.5	7.0	17.5
Winnipeg, Man.	26.0	29.5	7 0	17.5
Regina, Sask.	29 0	32.0	6.0	21.5
Saskatoon, Sask.	31 0	35.0	6.0	23 5
Edmonton, Alta.	29.5	33.5	6 0	22.5
Calgary, Alta.	26.0	30.0	6.0	10.0
Vancouver, B.C.	26.5	29 5	7 0	22 5
Montreal, Que.	22 0	25.0	6.0	15 0
St. Johns, N.B.	24.5	28.5	7.0	20.5
Halifax, N.S.	23.5	27.5	6.0	20 5

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline: Tank truck†	Gasoline: Posted retail	Gasoline: Incl'ds tax	Kero. tank wagon
Fresno	18.9	17.0	4.0	14.0
San Francisco	18.0	17.0	4.0	12.5
Los Angeles	16.5	15.5	4.0	12 5
Reno, Nev.	21.5	20.5	5.0	15.5
Portland, Ore.	17.0	16.0	5.0	13.5
Seattle, Wash.	18.0	17.0	6.0	13.5
Tacoma	18.0	17.0	6.0	13.5
Spokane	20.5	19.5	6.0	18 0
Phoenix, Ariz.	18.0	20.0	6.0	†16.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent. ‡Includes 5-cent state tax.

Pennsylvania-Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Pittsburgh, Pa.	13.5	14.5	4.0	9.5
Philadelphia	13.5	14.0	4.0	9.0
Scranton	13.5	14.5	4.0	9.0
Allentown	13 5	14.5	4.0	9.0
Altoona	13.5	14.5	4.0	9.5
Erie	13.5	14.5	4.0	9.5
Dover, Del.	13.5	14.5	4.0	9.0
Wilmington	13.5	14.5	4.0	9.0
Springf'd, Mass.	15.5	16.5	4.0	8.0
Worcester	14.5	15.5	4.0	8.0
Boston	14.0	15.0	4.0	8.0
Providence, R.I.	12 5	13.5	3.0	8.0
Hartford, Conn.	14.0	15.0	3.0	8.0
New Haven	14.0	15.0	3.0	8.0

Discount schedule effective November 1, 1932. In Delaware and Pennsylvania, 2 cents off station price on purchases of 2,000 gallons or more per month, in remainder of territory 1 cent. Wholesale discount 2½ cents per gallon on monthly deliveries of 20,000 to 100,000 gallons, 3 cents on 100,000 to 300,000 gallons, and 3½ cents on more than 300,000 gallons.

TANK WAGON CHANGES

(Regular grade gasoline and kerosene)

Standard Oil Co. of New Jersey reduced the gasoline tank wagon price 1 cent and the station price 1.4 cents to 12.9 cents each in Newark, N. J., on March 27.

Continental Oil Co. advanced the gasoline station price 1 cent to 23 cents at Great Falls, Mont., on March 17.

Standard Oil Co. of Kentucky reduced the gasoline tank wagon and station prices 2 cents to 19 cents each in Jacksonville, Fla., on March 18. On March 29 kerosene was reduced in Atlanta, Ga., 1 cent to 11 cents; in Maco, Ga., 1 cent to 10 cents; in Miami, Fla., was advanced 1 cent to 13½ cents, and in Pensacola, Fla., advanced 2 cents to 14 cents. On April 4 the gasoline tank wagon and station prices were reduced 2 cents to 19 cents in Mobile, Ala. On April 7 the kerosene price was advanced 1 cent to 12 cents in Jackson, Miss., and advanced 3 cents to 12 cents in Vicksburg, Miss.

Imperial Oil, Ltd., advanced the gasoline tank wagon and station prices 1 cent in the province of Alberta on April 1 to equalize the advance in the road tax from 5 cents to 6 cents, made effective on that date.

Associated distributors reduced the spot market prices and maximum contract prices on 24-26 fuel oil to 4¾ and 5¾ cents per gallon respectively on April 10, and on 18-22 fuel oil to 4¼ and 5¼ cents respectively.

Standard Oil Co. of New York reduced kerosene tank wagon price 1 cent in New York City effective April 5.

DEATH OF W. R. WADSWORTH, SR.

W. R. Wadsworth, Sr., died at his home in Oil City, Pa., on April 1 at the age of 90 years. Mr. Wadsworth was born in Somerset County, New Jersey, and was for many years employed by the pipe line companies operating in the vicinity of Oil City. His last work was done for the United Pipe Line Co. While working for that concern he was stricken blind in September, 1912, and retired upon a pension. Mr. Wadsworth is survived by Mrs. Frank Walther and Mrs. Lawrence Moltz, Oil City, Pa.; William R., Jr., Los Angeles, Calif.; Arthur V., East St. Louis, Ill., and S. C. of Buffalo, N. Y. He was buried in Grove Hill Cemetery, Oil City.

GEOLOGISTS DISCUSS TRIP

SHREVEPORT, La., Apr. 8.—Whether or not the annual field trip will be made by the Shreveport Geological Society, and where, was left at the April meeting to a committee to work out and report on at the next meeting. There was discussion of a choice between the Woodbine area of East Texas and the Jackson-Cockfield contact along the Conroe-Jackson trend through central Louisiana, and discussion also as to whether the society would join the East Texas Geological Society on the latter's field trip over the Woodbine territory, both questions being left to the field trip committee.

Subjects of Importance in Operating Practices Discussed at A. P. I. Meeting at Houston

By NEIL WILLIAMS

HOUSTON, Tex., Apr. 8.—The spring meeting of the southwestern district of the division of production, American Petroleum Institute, held in Houston Friday and Saturday was pronounced one of the most satisfactory held by the organization. The program was devoted entirely to technical and semitechnical papers and discussions of subjects of vital importance in modern operating and development practices. Being held on the Gulf Coast, where interest has been directed in recent months, the sessions devoted a large part of its attention to Gulf Coast papers.

In the election of officers for the ensuing year, John A. Ritter of the Sun Oil Co., Dallas, Tex., was elected chairman, succeeding Blaine Johnson of the Simms Oil Co., also of Dallas. Mr. Ritter the past year was vice chairman representing the East Texas district.

Vice chairmen chosen for the coming year included Paul Hubbard, Gulf Production Co., Houston, representing the Gulf Coast district; R. D. Rieser, Shell Petroleum Corp., Kilgore, East Texas; C. C. Clement, The Texas Company, Wichita Falls, North Texas; J. E. Warren, Continental Oil Co., Texon, West Texas; H. W. Bell, Lion Oil & Refining Co., El Dorado, Ark., Arkansas and Louisiana.

W. T. Doherty, Humble Oil & Refining Co., Houston, was elected secretary-treasurer.

New members of the advisory committee were named as follows: F. C. Sealey, The Texas Company, Houston, chairman; E. H. Blum, Atlantic Oil Producing Co., Dallas; J. D. Collett, Collett & O'Keefe, Fort Worth; Charles Fitzgerald, Sinclair Prairie Pipe Line Co., Fort Worth; James Hutcheson, Rio Bravo Oil Co., Houston; Blaine Johnson, Simms Oil Co., Dallas; Roy B. Jones, Panhandle Refining Co., Wichita Falls; A. M. McCorkle, Stanolind Oil & Gas Co., Fort Worth; F. Ray McGrew, Standard Pipe Line Co., Shreveport; M. McLoughlin, Magnolia Petroleum Co., Dallas; Underwood Nazro, Gulf Production Co., Houston; John A. Ritter, Sun Oil Co., Dallas; Charles F. Roeser, Roeser-Pendleton Co., Fort Worth; Arch H. Rowan, Rowan Drilling Co., Fort Worth; M. B. Sweeney, Sun Oil Co., Dallas; T. E. Swigart, Shell Petroleum Corp., Houston; R. H. Morrison, the California Co., Dallas; B. S. SoRelle, Pure Oil Co., Fort Worth; John R. Suman, Humble Oil & Refining Co., Houston, and W. L. Todd, Columbia Oil & Gas Co., Dallas.

Many Restrictions

All sessions of the two-day meeting were largely attended. Approximately 150 registrations and visitors were reported. The entire program was carried out as scheduled.

First on the program was a paper by J. U. Teague, petroleum engineer of the Humble Oil & Refining Co. on "Improvements in Setting Up and Dismantling Rotary Rigs." Mr. Teague has devoted study to the matter of reduction of rig dismantling, moving and reassembling. This has been a vital problem in recent years as the result of efforts of operators toward lowering drilling time and costs in the intensive drilling programs carried out in East Texas, Rabbs Ridge and Conroe. Any saving in time which can be made in dismantling, moving and setting up rigs is of particular importance as that time is wasted time as far as drilling is concerned. Mr. Teague explained how in several fields systematic laying out of setups and proper arrangement of equipment to use the shortest lines and fewest connections and working out a definite procedure in tearing down, moving and setting up rigs had produced efficient results.

D. G. Hawthorne, production engineer of the Barnsdall Oil Co., Tulsa, presented a "Discussion of Subsurface Pressure Instruments," in which he listed the various types of instruments and devices now in practical use for measurement of bottom hole pressures. While doing this he showed the various advantages and disadvantages of each, explaining the various principles involved by lantern slides.

Pumping With Pneumatic Cylinders

A paper on "The System of Pumping Wells With Pneumatic Cylinders" was presented by H. B. Thomson, division production engineer of the Pure Oil Co., Fort Worth, Tex. He described in detail the pneumatic pumping process and equipment which his company had put in use. He stated that "the calculated and actual performance of the pneumatic pumping process as described, points to a new method of pumping practice which permits the operation of wells at speeds commensurate with their productions, reduces stress on sucker rods and wear on subsurface equipment, provides a standard installation of high salvage value with flexibility in both producing capacity and power requirement." Motion pictures of the pump in operation were shown.

R. B. Whitehead, Atlantic Oil Producing Co., Dallas, who had a paper on "The Value of Paleontology as Applied to Wildcat Drilling" emphasized the importance of companies paying more attention to micropaleontology, the need for more care in the methods of collecting, handling and analyzing of samples and greater co-operation among paleontologists. He dwelt strongly on methods for the conservation of time and money in the application of paleontology and collection of paleontological records.

A thorough discussion of "Acid Treatment of Lime Formation," a subject which has come into especial prominence within the past year, was given by B. A. Cunningham, Jr., engineering department, Simms Oil Co., Dallas.

Each Well Requires Study

Mr. Cunningham stressed the point that in any case of acid treatment, each well should be studied carefully, giving full consideration to the mechanical, physical and chemical conditions and to other various factors as nearly every case requires individual treatment.

Mr. Cunningham stated that acid treatment has a definite place as a relatively cheap, simple and effective method of increasing the immediate production from certain classes of lime wells, although the effect on the ultimate production cannot be foretold in all cases as yet.

A paper prepared by H. L. Strader, petroleum engineer, The Texas Company, Houston, and C. P. Parsons, Halliburton Oil Well Cementing Co., Duncan, Okla., was offered by Mr. Strader. The paper dealt in detail with the characteristics of the field, drilling and production practices, the blowout and crater situation, together with the program being carried out by operators in an effort to combat the blowout and cratering problem. At the close of the paper, Mr. Parsons presented motion pictures of the Conroe blowout area, together with pictures of other bad blowouts and fires.

At the closing session Saturday morning three interesting papers were discussed, "Rotary Drilling Fluid Control in the Gulf Coast," by J. W. Graybeal, petroleum engineering department, the Humble Oil & Refining Co., Houston; "Deep Drilling in the Gulf Coast," E. P. Hubbard, chief production engineer, Gulf Production Co., Houston, and "Development and Production Practice in the Hobbs Field, New Mexico," by Edwin Wahlstrom, Stanolind Oil & Gas Co., Hobbs, N. Mex.

Drilling Fluids Discussed

Mr. Graybeal dealt with the changes in ideas as to the qualities of good drilling fluid, the purposes of drilling fluid, the practices in use of drilling fluid in several fields, advantages of drilling fluid control and needs in handling special problems. His treatment of the heaving shale problem on the Gulf Coast was of particular interest as drilling fluids are going to play an important part in the efforts of operators to combat heaving shale.

Mr. Hubbard discussed equipment and machinery problems being faced by Gulf Coast operators in deep drilling. He pictured the equipment now in use and the many changes which have been made in recent years, and also some of the drilling practices now being followed.

Mr. Wahlstrom outlined the various characteristics of the Hobbs Field, together with the drilling and production practices, problems and the water encroachment situation. He stated water encroachment to date has been of major proportions only in the upper member of the producing horizon and that formation packers have been used successfully to shut off this water. He laid stress on the fact that the Hobbs Field has been under proration almost since its discovery and has been given to unit operation.

All sessions were held at the Rice Hotel. John A. Ritter of the Sun Oil Co., Dallas, presided at the Friday morning session; Blaine Johnson, Simms Oil Co., Dallas, at the Friday afternoon session, and W. T. Doherty, Humble Oil & Refining Co., at the Saturday morning session.

February Report of the Bureau of Mines Shows Little Change in Crude Stocks

According to reports received by the Bureau of Mines, Department of Commerce, the production of crude petroleum in the United States during February, 1933, totaled 61,029,000 bbls., or a daily average of 2,180,000 bbls. This represents an increase of 116,000 bbls. over the daily average in January and is 25,000 bbls. higher than the average daily output a year ago. Nearly all the increased output in February came from two fields, East Texas and Oklahoma City, but the Van Field and other areas in Texas and Kansas, also recorded substantial gains in production. The daily average production in the East Texas Field was 380,000 bbls., the highest for any month since November, 1931, that in the Oklahoma City Field was 150,000 bbls., also the highest figure recorded since December, 1931. Drilling in the East Texas Field again declined materially and only 155 wells were completed in February, compared with 253 in January.

Daily average runs to stills of domestic crude increased in February but this was considerably outweighed by the increase in production, with the result that total stocks of refinable crude increased 247,000 bbls., compared with a decrease of 3,367,000 bbls. in January. This was the first time these stocks have increased in nearly a year.

Refined Products

An increase in crude runs to stills was reflected in a gain in motor fuel production of from 999,000 bbls. daily in January to 1,011,000 bbls. daily in February. No gasoline was imported during the month, but exports declined materially. The indicated domestic demand for motor fuel in February was 833,000 bbls. daily, a decrease of 5 per cent from a year ago. Total demand for motor fuel (domestic demand plus exports) was 7 per cent below a year ago. Stocks of motor fuel increased 3,024,000 bbls. during the month, totaling 58,781,000 bbls. on February 28, 1933. At the current rate of total demand, these stocks represent 65 days' supply, compared with 59 days' supply on hand a month ago and 68 days' supply on hand a year ago.

The daily production and indicated consumption of gas oil and fuel oil showed substantial increases over January. The indicated demand for lubricants increased materially from the low point reached in January. A continued decline in stocks of coke indicated an increasing demand for that commodity.

Reciprocal Tariffs Sought by Export Manufacturers

NEW YORK, Apr. 11.—Meeting at its offices here, the board of directors of the American Manufacturers Export Association, including Gen. Palmer E. Pierce, representing Walter C. Teagle, president of the Standard Oil Co. (New Jersey), adopted a resolution favoring the immediate opening of negotiations by the United States Government with other nations for reciprocal bargaining tariffs.

These negotiations, it is pointed out in the resolution, should take into account "reasonable protection in those instances where national or special necessities justify it" but must at the same time give serious consideration "to the economic advantages of the nation as a whole." In this connection, it is suggested that a policy shall be adopted which "shall take full and proper account of the interrelated needs of agriculture, industry and labor."

In the preamble the board stresses the points that in order to bring about a restoration of international prosperity, including most importantly our own domestic prosperity, there must be a liberal interchange of goods and services among the nations of the world, but this interchange has been for some time hampered by restrictions placed upon it resulting detrimentally to American domestic industries.

Copies of the resolution will be sent to President Roosevelt, who recently recommended the adoption of bargaining or reciprocal tariffs by the United States in negotiation with other nations; to Secretary of State Cordell Hull, to Vice President Garner, Secretary of Commerce Roper, members of Congress, and various foreign trade clubs and commercial organizations throughout the country.

Fuel Oil Markets Strengthen in East Coast Areas as Importing Companies Reduce Shipments

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

NEW YORK, Apr. 10.—Although gasoline showed further strength in the East Coast area during the past week, the outstanding development was a marked stiffening in the market for heavy oils. Major importing companies are reported to have reduced drastically their shipping schedules from South America and Mexico as a result of the sentiment which developed at the recent Washington conference, and it is indicated imports of crude and fuel oil during the current quarter will not only be materially under those for the comparable months of 1932, but will show a sharp drop from the first quarter of this year.

Sentiment among marketers of bunker oils is decidedly bullish, and this feeling has also spread to the furnace oil market, as indicated by the delay of major refiners in announcing contract prices for fuel oils for the 1933-34 season. While none of the major interests has announced quotations for the coming season, it is reported prices for next year will be on a par with current quotations, or possibly one-half to 1 cent higher.

The market for bunker "C" oil, however, is expected to show an almost immediate reaction to the stronger statistical position of the market for heavy oil. Stocks of bunker oil available at East Coast ports are not extensive, and the drop in imports has already created something in the nature of a shortage of this oil. Present indications are that bunker oil will be brought into this territory from the Gulf Coast and from California to avoid the necessity for any extensive increase in refinery runs at plants in the East Coast area. The present posted price for bunker "C" oil is 75 cents per barrel, but refiners are netting only 70 cents on a large part of their gallonage, as they are allowing a concession of 5 cents on contract deliveries to steamships in ocean traffic. At present prices for coal, there is still considerable leeway for an advance in bunker oil prices, it is felt, and coal bunkerers are expected to mark up their prices proportionately to the advance in bunker oil, when it develops. The Diesel oil market is not expected to immediately reflect the stronger market position of bunker "C."

In the gasoline market, the principal development was the advance of 1 cent in tank wagon and service station prices, announced by the Standard Oil Co. of New York, Inc., covering New York and New England. Other marketers followed. With the exception of New Jersey, where a bitter price war still is in progress, the remainder of the East Coast gasoline market presented a firmer picture.

Widespread market interest was aroused by the action of The Oil and Gas Journal in revising its system of compilation of production reports, and substitution of its own report on East Texas output for the official reports. This action, it is pointed out, has called national attention to the hot oil situation in East Texas and has clearly disclosed the potential effect of a continuation of this condition.

Uncertainty regarding the crude price outlook, particularly in East Texas, brought about an almost complete cessation of export inquiries last week, and foreign buyers indicated their intention of remaining out of the market until the situation is stabilized.

Refinery Gasoline

Eastern refinery gasoline markets were marking time, awaiting further developments in the crude situation. With one purchaser posting 20 cents per barrel for East Texas oil and unconfirmed rumors of sales as low as 7 cents in the field, the possibility that small independent refiners might again overproduce and flood the market with cheap gasoline is causing some concern here.

Posted prices for U. S. Motor gasoline continue unchanged at 4¾ cents at principal tank car marketing centers in the East, with gasoline of 65 octane number and above still held at 5 cents. These prices are being generally adhered to in current sales.

Tank Wagon Gasoline

Material progress has been made in the restoration of more stable marketing conditions in New York and New England territory. The situation in New Jersey gasoline markets is described by leading marketers as "a hopeless mess."

Kerosene

Tank car kerosene demand continues to run into large totals, and the market remains fairly steady at 5¼ cents for 41-43 water white, f.o.b. refineries. Jobbers are reported to be stocking up in anticipation of a sustained demand. A number of the major marketers continue to bring additional supplies of kerosene from California and the Gulf to take care of distributing requirements in excess of the present output of their refineries in this area.

Tank wagon kerosene markets were steady and unchanged. Consumption of kerosene in range burners is extending steadily, and this has made for a new departure in the tank wagon business. A number of companies are delivering kerosene to this class of consumers in lots of 50 gallons each.

Fuel Oil

The posted price for bunker "C" remains at 75 cents here, with refiners continuing to grant a concession of 5 cents to contract buyers operating ocean-going steamships. Early abolition of this concession, or a price increase more than offsetting the rebate, is anticipated.

Diesel Oil

A better feeling was in evidence in the Diesel oil market. While refiners reported volume was somewhat light, production has been materially curtailed, and the statistical position is favorable. The posted price remains unchanged at $1.65, bulk, f.o.b. terminals, for marine delivery, and 4 cents for 26-30 Diesel in tank car lots, f.o.b. terminals.

Gas Oil

Contract gallonage was holding up well, unchanged at 4 cents, tank car lots, f.o.b. terminals for 28 gravity minimum oil. Stocks of gas oil are not excessive, and generally in strong hands.

Furnace Oil

Current quotations hold at 5 cents for 36-40 oil, 4 cents for 32-36, and 3½ cents for 21 gravity industrial fuel oil, all in tank car lots, f.o.b. terminals, and it is understood sellers are unwilling to accept contract business for next season at these price levels. Volume of business was reported to be holding up surprisingly well.

Wax and Petrolatum

Paraffin wax buyers were still holding off the market except for immediate shipment material, and a rather easy undertone was again in evidence. Quotations were unchanged on all melting points.

In the petrolatum market, volume had shown some falling off, with buyers inclined to defer additional commitments.

Lubs

After having resisted buyers' pressure for several weeks, refiners were forced to lower their quotations on cylinder oils, the reductions taking in all grades. Revised quotations, all per gallon in barrels, are as follows: 600 Warren E, 17½ cents; 600 steam refined unfiltered, 13½ cents; 650 steam refined unfiltered, 16 cents; 600 flash steam refined, 17 cents, 630 flash steam refined, 22 cents; bright stock, No. 8 color, 22½ cents; bright stocks, No. 6½ color, dil., 21½ cents. Despite the reduction in prices, export buying continued of very little volume.

In the market for red and pale oils a fairly steady undertone was in evidence, although some uncertainty as to the immediate market outlook was indicated. Export demand was rather light, but domestic inquiry was reported to be picking up somewhat.

Exports and Imports of Refined Products, Receipts of California Oils in the East

NEW YORK, Apr. 10.—The kaleidoscopic changes in the crude market last week left export operators in a quandary, and they were unable to quote firm on foreign inquiries. A French buyer came into the market for 8,000 tons of crude for late April-early May lifting at the Gulf, but refused a counter-bid when the oil was offered him at 63 cents. Reports of crude at 10 cents per barrel in East Texas were undoubtedly responsible. One or two cargoes may be picked up for immediate loading at around 58 cents per barrel, but sellers are unwilling to go under that fgiure.

In the gasoline export market, it was reported a limited quantity of U. S. Motor was available at the Gulf for April loading at 3¼ cents, one-eighth under the quotation during the previous week. No business was reported taken. For 64-66 for prompt lifting, sellers were still quoting 3⅝ to 3¾ cents. Export sellers were unwilling to quote on gasoline for delivery at export terminals after April 30.

Export trade circles were interested in Paris reports indicating that Rumania had signed up to continue her conservation program through the second quarter of the year, with daily crude output in that country to be limited to 138,750 bbls. during this period. It is understood a limitation of Rumanian exports was also embodied in the agreements, in which the world oil companies agree to extend Rumania certain concessions in European consuming markets. It is also reported the world companies pledged that American production would be curtailed to a maximum of 2,000,000 bbls. per day, and that surplus stocks of crude and products in this country would be reduced.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended April 1 totaled 1,228,000 bbls., a daily average of 175,429 bbls., against 787,000 bbls., a daily average of 112,429 bbls., for the previous week, and a daily average of 151,107 bbls. for the four weeks ended April 1. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	196,000
New York	727,000
Philadelphia	258,000
Others	137,000
Total	1,228,000
Daily average	175,429

There were no imports at Gulf Coast ports during the week.

Imports during the week ended April 1 comprised 691,000 bbls. of crude oil and 537,000 bbls. of fuel oil.

Petroleum Exports

The following table shows exports of principal refined petroleum products reported from the port of New York during the three weeks ended April 1 (all figures in gallons unless otherwise noted):

	Week ended		
	Apr. 1	Mar. 25	Mar. 18
Gasoline	15,000	5,000	352,000
Naphtha	5,000	.....	322,000
Kerosene	5,000	20,000	17,000
Fuel and gas oil	.....	1,000	6,000
Lubricating oil	740,000	2,736,000	1,848,000
Petroleum, ref.	290,000	35,000	565,000
	Pounds		
Petrolatum	.....	5,000	30,000
Paraffin wax	1,475,000	1,712,000	820,000
Refined	265,000	145,000	112,000
Scale	155,000	260,000	235,000
Lub. grease	525,000	745,000	585,000

California Oil Receipts

Receipts of California crude and refined oil at Atlantic and Gulf Coast ports for the week ended April 1 totaled 262,000 bbls., a daily average of 37,428 bbls., compared with 417,000 bbls., a daily average of 59,571 bbls., for the previous week, and a daily average of 55,964 bbls. for the four weeks ended April 1. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	37,000
New York	80,000
Others	71,000
Total	188,000
Daily average	26,857
At Gulf Coast ports—	
Port Arthur	74,000
Total	74,000
Daily average	10,571
At Atlantic and Gulf Coast ports—	
Total	262,000
Daily average	37,428
Daily average four weeks	55,964

Receipts of California oil during the week were made up of 117,000 bbls. of gasoline and 145,000 bbls. of fuel oil, of which 74,000 bbls. of the latter were received at Port Arthur.

At the close of the week the following cargoes of California oil were reported afloat for Atlantic and Gulf Coast ports:

For New York—80,000 bbls. of gasoline on the Tide Water Associated tanker David McKelvey; 78,000 bbls. of furnace oil on the Socony-Vacuum tanker Java Arrow; and 17,700 bbls. of gasoline on the same tanker, also for New York.

For Port Arthur—75,000 bbls. of gas oil on The Texas Company tanker Nevada.

Stressing the Higher Antiknock Value on Regular Grade Gasoline Is Chicago Market Feature

By R. C. CONINE
Chicago Bureau, The Oil and Gas Journal

CHICAGO, Apr. 10.—One of the most interesting features in gasoline marketing developments in Chicago district this week is the breaking into the 70 octane or better class with the regular grade gasoline by Standard Oil Co. (Indiana) and Shell Petroleum Corp. on the basis of the C.F.R. research method of rating antiknock value. Two other companies are probably in the 70 octane classification this week, as tests made on their regular grade gasoline picked up April 1 showed octane ratings of 68.5 and 68.3, respectively. The Shell and the Standard companies are stressing higher antiknock value of their regular grade gasolines in their advertising. The Shell corporation, offering its "Super Shell" gasoline at the regular grade gasoline price, calls it a premium gasoline without the 3-cent premium price. "If you prefer an ethylized fuel," the corporation advertising states, "it is obtainable under the name of Super Shell Ethyl, a double premium gasoline at a single premium price." The Standard company is using the name "Sky Skimmer" in connection with its "improved" Red Crown (regular) gasoline.

On April 1, samples of the regular grade gasoline of four major companies were picked up in Chicago. These included Shell and Standard, which have since been stepped up in antiknock value. The gasolines taken April 1 tested as follows:

	Company			
	A	B	C	D
Octane No.	63.0	68.3	68.5	65.7
Gravity	61.8	63.3	62.8	62.1
Initial	93	87	95	90
Endpoint	386	397	380	387
Recovery	96.1	94.2	96.3	95.3
Per cent over at 135°.	11.9	19.1	14.3	14.0
Per cent over at 150°.	16.7	23.4	19.8	19.5
Per cent over at 250°.	53.8	53.7	57.7	55.7
Per cent over at 375°.	96.1	95.4	97.9	96.6

An interesting point in connection with the tests made on the gasolines of these companies is the fact that the third grade gasoline of the company whose regular grade had an octane rating of 65.7 was only 1.7 point under the regular in antiknock value. Octane ratings of the two regular gasolines picked up Saturday morning, April 8, were 70.5 and 71. Other tests made on one of these gasolines were: 61.2 gravity; 98 initial; 396 endpoint; 9.4 per cent over at 135°; 11.2 per cent over at 150°; 50 per cent over at 250°, and 95.6 per cent over at 375°.

Gasoline Tank Car Markets

Gasoline consumption is moving up steadily in spite of the serious obstacle of wintry weather and rains. Distributors report that while more gasoline is being ordered out, the larger part is on contract.

The gasoline tank car markets, price-wise, have been extremely nebulous in appearance as there has been little spot movement and in what little activity there has been in the open markets there has been considerable confusion in connection with octane brackets. Offerings of 60 octane gasoline have been made freely on the basis of the below 57 material low. Some gasoline which is slightly higher in antiknock rating, but off on color, has been offered at the same low price.

The commercial discount contract is again on the grill. This time the accusation against one of the major companies is that certain commercial accounts are given a discount of 2 cents instead of 1 cent at the service station. Salesmen of a large commercial user of gasoline, for instance, are reported to be using red identification cards which call for an additional 1-cent discount. A large number of service stations, particularly in Chicago district, are allowing 2 cents off the service station price to any customer who demands it. New customers are canvassed with the 2-cent discount as inducement.

Tank car gasoline prices in the open market have ranged from as low as 1½ cents for resale to 1⅞ cents to the trade. However, the octane bracket set-up has undergone considerable disturbance, due to the large supply of comparatively good antiknock gasoline available from East Texas sources. These gasolines were offered freely at prices ruling for 50 to 54 octane gasolines from less favored sections. The indications are that some time will elapse before any definite steps are taken to revise the present system of brackets, and for this reason a large volume of gasoline classed in the middle octane bracket will move on the below 57 price levels. Not all of the jobbers who purchase gasoline of "middle bracket" knock rating care to spend $10 to check up the refiner, and are perfectly content to advertise their gasoline as high antiknock material as any question of their claims can be passed on to the refiner. While a large part of the gasoline given a good antiknock rating by the refiner shows by test that the refiner was carried away by enthusiasm, the fact is that much of the gasoline being sold by price cutters at the service stations is of good octane rating and, until recently, in most cases superior in this respect to the third grade gasolines sold by the larger companies. The third grade gasolines are being improved considerably and many of these now rate as well as the regular grades of a few months back.

Kerosene Tank Car Markets

The kerosene tank car markets continue to be one of the few bright spots in the refined petroleum product markets. Increased demand in the face of unfavorable conditions for farm use, and strong statistical position are reflected in the one-eighth of a cent advance noted in these materials. The 41-43 water white kerosene advanced to a range of 2⅜ cents to 2⅝ cents, and the 42-44 water white material advanced to a range of 2½ cents to 2¾ cents.

Special Naphthas

The special naphtha tank car markets are marking time with most of the producers and marketers inclinded to the belief that a sharp advance is scheduled for the near future.

Burning Oil Tank Wagon Reduced

Hughes Oil Co. and other burning oil distributors of Chicago, effective Monday, are reducing the tank wagon price of the two heavy grades of fuel oils. The 24-26 gravity oil will be cut a quarter of a cent to 4¾ cents a gallon, and the 18-22 gravity grade will be cut a half cent to 4¼ cents. Major company prices have not been changed yet and are as follows: No. 1, 7 cents; No. 2, 6½ cents; No. 3, 5¾ cents; No. 4, 4¾ cents, and No. 5, 4 cents. Prices quoted by one independent distributor are as follows: No. 1, 6¾ cents; No. 2, 6¼ cents; No. 3, 5½ cents; No. 4, 4½ cents, and No. 5, 4½ cents.

Most of the independent burning oil distributors say that if oil peddling by sellers whose only investment is a dilapidated tank truck is to be eliminated as a price disturber, the margin between tank car and tank wagon prices must be narrowed. For this reason it is believed that the following prices will be in effect soon among most of the distributors: No. 1, 6½ cents; No. 2, 6 cents; No. 3, 5¼ cents; No. 4, 4½ cents; No. 5, 4 cents. Some of the larger companies are in sympathy with the contentions of these distributors while at least one other major company sees in these activities a movement to depress the tank car markets at the beginning of the new contracting season. One major is expected to come out shortly with a proposition basing the price on "market date of shipment and no top."

Distillate Tank Car Markets

The distillate and gas oil markets are in slightly better tone than last week due to continued cold weather and extended cracking operations by refiners who have been supplying a large part of district requirements. These refiners are said to be several days behind in their shipments of distillates and special gas oils. An East Texas refiner who had booked considerable business in distillates in the district is said to be two weeks behind in shipments. Prices on the 32-36 straw, 38-40 straw and 38-40 prime white advanced an eighth of a cent. The 32-36 industrial gas oil likewise advanced an eighth of a cent. Fuel oils held to last week's price schedule because of increased industrial demand. New fuel oil business for steel mills involves a 2,000,000-gallon order of 12-14 gravity material of under 500 viscosity at 100 degrees Universal Saybolt.

Refined Wax

Continued strengthening is noted in the refined wax markets by principal sellers in the district. Price advances are expected.

Do You Remember?

From The Oil and Gas Journal Files

25 Years Ago

April 13, 1908

C. F. Moore, resigns as assistant general superintendent of the Gulf Pipe Line Co. and will go into the oil business for himself in Oklahoma.

The Prairie Oil & Gas Co. had 34,555,351.62 bbls. of crude oil stocks on April 1 and has been running an average of 26,000 bbls. per day to storage since January 1. Total crude oil stocks in Kansas and Oklahoma are 48,355,351.62 bbls.

A representative of the American Car & Foundry Co. is in Tulsa trying to interest producers in the organization of a tank car line which will ship 10,000 to 15,000 bbls. a day of Glenn Pool oil to distant refiners, particularly South Texas refiners.

E. Rogers Kemp, representing the Jennings Brothers and the Pure Oil Co. in the Oklahoma fields, was married on April 9 to Miss Laura Jennings, of Pittsburgh, Pa.

20 Years Ago

April 17, 1913

The Oklahoma Mutual Oil & Gas Co. has leased a large block of land in the vicinity of Oklahoma City and will drill a test. The promoters believe there is oil underneath the capital city.

At the annual meeting of the Associated Oil Co. held in Kern River, Calif., headquarters, William Sproule was elected president; Frank Buck and W. F. Herrin, vice presidents; P. G. Williams, secretary; and W. A. Sloan, treasurer.

Mrs. Laura Jennings Kemp, wife of E. Rogers Kemp, prominent Oklahoma oil producer, died in Magee Memorial Hospital, Pittsburgh, Pa.

Wildcatters are actively drilling in Montgomery, Coleman, Shackelford, Brown, Throckmorton, Eastland, Erath and Haskell Counties, Texas, where, up to now, no oil production has been discovered.

10 Years Ago

April 12, 1923

Herbert L. Pratt, Standard Oil Co. of New York, back from a trip to the Orient, says natives in the Far East buy their kerosene by the gill. A small lampful, sufficient for the night, being the average purchase, which accounts in part for the fact that a 7-cent product in the United States becomes a 40 to 50-cent product in China and India.

After 18 years of exploration, production has been found on the Big Hill Dome in Jefferson County, South Texas.

Pennsylvania grade oil has been increased to $4 per barrel. Oklahoma, Kansas and North and Central Texas crude oil prices range from $1.50 to $2.60 per barrel.

Eight nonproducing leases in Township 27-5, Burbank Field, Osage County, Oklahoma, were purchased at auction for $7,070,000.

NATURAL GASOLINE MANUFACTURE

Prevention of Accidents Requires Study of Men

By DON L. CROSS
Standard Accident Insurance Co.*

Statistics prove that less than 5 per cent of industrial accidents are caused by the failure of machinery and equipment, therefore, over 95 per cent must be charged up to the human element. If we safeguard our machinery and equipment to such an extent that it is impossible for an accident to occur from that source we have only eliminated less than 5 per cent of our trouble.

It is not possible to devise a mechanical safeguard that would protect the human element from carelessness, inefficiency, recklessness, indifference, inattention and numerous other things that are included in unsafe practices and mental causes of accidents. Therefore, mental training is the only effective weapon we have to combat accidents, inefficiency and waste.

Before the employes will accept and absorb constructive training, there must be some incentive, something must be done to create a desire on their part for this training. Splendid results have been obtained by conducting contests and giving recognition of some sort for those having the best accident and efficiency record. The rules and regulations governing the contests should emobdy as many of the company's operating rules and instructions as possible. The enthusiasm and interest created by the contest will insure enough study of the rules to provide a good general education. We must go still farther and carry our educational program to each individual employe. This can only be accomplished by making the educational program a part of the regular operating program.

The management should promulgate rules, regulations and specific instructions which should be passed on down through the various superintendents, department heads and foremen, each in turn assuming responsibility for the execution and enforcement of the rules in his respective department. Following out this procedure the foreman is the man who has a real opportunity to accomplish constructive work, and if he is a real foreman he will not overlook this opportunity. Each individual is a problem in himself and requires personal training and supervision.

A foreman's most important duty should be to study the job at hand and make sure that everything is in readiness and that every man in the gang is familiar with any and all hazards that they may encounter, and that they have the proper safe tools and equipment with which to do the job safely.

A foreman should study his men and be familiar with their characteristics, their habits, their home life, etc. If an employe is having domestic troubles, sickness in his family, or financial worries, he should not be put at dangerous work where he may injure himself or a fellow workman. I have made a study of the accident records of a refinery employing about 1,100 men to determine whether or not the younger employes, that is young in the service of the company, had more accidents than the ones having more experience and the results were as follows: 47 per cent of the employes with over one year service had only 14 per cent of the accidents, and 53 per cent of the employes with less than one year service had 86 per cent of the accidents.

*Part of paper presented before plant operators meeting of Natural Gasoline Association of America at Breckenridge, Tex.

Stocks of Natural Gasoline Show Large Increase Despite Lesser Production

Two thousand barrels less natural gasoline were made daily in the United States during February than in January, but stocks were added to at the rate of 7,000 bbls. daily. This condition reflects the declining seasonal demand for natural gasoline in all sections and comes on the heels of a period of months during which refiners have been maintaining relatively high inventories of the commodity at their plants. The production of natural gasoline in February for all fields totaled 106,800,000 gallons compared with 120,800,000 gallons in January, according to the U. S. Bureau of Mines. This comparison is distorted, however, by the fact that the February report covers a shorter period of time. In a similar manner, when comparing the production figures according to fields, the same fact must be recognized.

The most effective comparison of operations may be made covering the first two months of this year with those of the same period in 1932. Then it will be seen that production has fallen short by about 1,000,000 bbls. already this year.

Every major field is producing less natural gasoline than a year ago and, except for the new East Texas production, declines are reported for the lesser important areas. California shows the largest decrease in output, the 1933 production totaling 82,700,000 gallons for the first two months, while for the same period last year the production was 98,700,000 gallons. This difference of 16,000,000 gallons is accounted for by decreases in every field there, the Long Beach and Santa Fe Springs Fields showing the principal differences.

Oklahoma ranks second in the extent natural gasoline production has been curtailed in comparing the two periods. Last year Oklahoma produced 69,600,000 gallons and this year has produced only 54,200,000 gallons within the same period. The drastic decline in the production from plants located in the Seminole area is a major factor in bringing the total for the State to its relatively low mark. In fact, except for the rather well sustained production of the Oklahoma City group of plants, Oklahoma's total would have been off more than 25 per cent. This probably presents a more pessimistic picture with respect to Oklahoma's ability to produce natural gasoline than actually exists, for the reason that the Oklahoma City Field has been kept under rather strict proration and considerably more natural gasoline could have been produced to take up the decline shown in the Seminole Field had it been allowed to flow freely as had been the case in previous years, or was practiced when the Seminole Field was developed. The same comments could be made regarding conditions in California also where the Kettleman Hills Field could easily be made to produce more natural gasoline to equalize the natural decline in the older fields of the State if a market could be found for the crude oil and the field allowed to flow more freely.

Texas also shows a sizable decline in the production of its fields. In the Panhandle area the output has been decreased from 30,500,000 gallons for the first two months of 1932 to 25,600,000 gallons for the same period this year. There may be a sharp reversal of this trend, however, over the next two months, during which time production will be increased as the result of well owners being granted permits to produce gas from their wells and process it through natural gasoline plants without meeting the previous requirements that the residue be utilized as fuel or used for lights. More than 40 companies have been granted permits to produce gas from their wells and they are connecting their wells to existing gasoline plants in many cases and several additional plants may be built over the immediate future. The fact that natural gasoline prices are so low has dampened the early enthusiasm regarding the building of new plants. The additional production from the Panhandle Field is expected to approximate 160,000 gallons daily.

In the accompanying table showing the distribution of natural gasoline during February there is a marked decline shown in the volume blended by refiners. In January the quantity blended was 2,145,000 gallons and in February 1,645,000 gallons. The shorter month accounts for some of this but another important factor was the slowing up of all gasoline shipments during the period leading up to the general banking holiday which came in the first days of March.

In the third table, which is included here, the relative production of natural gasoline, cracked gasoline and straight-run gasoline is shown for the first two months of this year and the first two months of 1932. It will be seen that whereas the total motor fuel production this year is 90 per cent of that of 1932, the production of natural gasoline this year is only 84 per cent. Thus, natural gasoline continues to be a less important source of motor fuel than a year ago.

PRODUCTION AND DISTRIBUTION OF NATURAL GASOLINE
(Thousands of barrels of 42 U. S. gallons)

	Feb., 1933 Total	Feb., 1933 Dy.av.	Jan., 1933* Total	Jan., 1933* Dy.av.	Jan.-Feb., 1933	Jan.-Feb., 1932
Production	2,543	91	2,876	93	5,419	6,490
Decrease in all stocks	....	....	5	....	....	....
Total	2,543	91	2,881	93	5,419	6,490
Blended at refineries	1,645	59	2,145	69	3,790	4,066
Blended at plants east of California	8	....	5	....	13	8
Run through pipe lines in California	115	4	117	4	232	218
Jobbers, exports, etc.	336	12	373	12	709	775
Increase in all stocks	199	7	....	....	194	690
Losses	240	9	241	8	481	733
Total	2,543	91	2,881	93	5,419	6,490

*Revised.

PRODUCTION OF NATURAL GASOLINE BY FIELDS
(Thousands of gallons)

	Natural gasoline: Production Feb., 1933	Jan., 1933	Jan.-Feb., 1933	Jan.-Feb., 1932	Stocks end of month Feb., 1933	Jan., 1933	Blended motor fuel, Feb., 1933: Natural gasoline used	Naphtha or other oils used	Stocks end of month
Appalachian	6,000	6,400	12,400	14,600	4,065	1,975	26	36	102
Ill., Ky., Ind.	800	800	1,600	1,200	230	205	...	...	...
Oklahoma	25,400	28,800	54,200	69,600	7,694	7,451	11	17	34
Oklahoma City	6,500	6,400	12,900	14,200	968	894	...	...	...
Osage County	3,000	3,400	6,400	8,500	1,037	1,044	1	...	4
Seminole	6,800	8,100	14,900	21,200	2,163	2,231	1	...	...
Rest of State	9,100	10,900	20,000	25,700	3,526	3,282	9	17	30
Kansas	2,100	2,200	4,300	5,600	356	426	25	7	32
Texas	25,200	*28,500	53,700	61,100	9,954	7,029	90	82	37
East Texas	1,100	1,100	2,200	(†)	81	112	39	81	37
North Texas	1,800	1,900	3,500	4,400	719	709	...	...	...
Panhandle	12,900	13,600	25,600	30,500	5,545	3,123	1	1	...
West Central	6,000	7,000	13,000	15,700	2,608	2,227	...	...	...
Rest of State	4,500	*4,900	9,400	10,500	1,001	858	...	...	...
Louisiana	3,500	3,500	7,000	9,100	831	892	132	...	35
Arkansas	1,100	1,400	2,500	3,400	103	143	45	6	15
Rocky Mountain	4,300	4,900	9,200	9,900	1,075	1,011	...	...	...
California	38,400	44,300	82,700	98,700	3,935	3,403	...	...	...
Huntington Beach	1,300	1,400	2,700	3,800	.....	.....	...	...	...
Kettleman Hills	10,800	13,600	24,400	25,900	.....	.....	...	...	...
Long Beach	6,600	7,400	14,000	18,600	.....	.....	...	...	...
Santa Fe Springs	6,400	7,200	13,600	17,900	.....	.....	...	...	...
Ventura Avenue	3,300	3,600	6,900	8,600	.....	.....	...	...	...
Rest of State	10,000	11,100	21,100	24,000	.....	.....	...	...	...
Total	106,800	120,800	227,600	272,600	27,343	22,625	329	148	255
Daily average	3,810	3,900	3,860	4,540	.....	.....	12	5	...
Total (thousands of barrels)	2,543	2,876	5,419	6,490	651	539	8	4	6
Daily average	91	93	92	108	.....	.....	...	...	...

*Revised. †Included under "Rest of State."

PRODUCTION OF MOTOR FUEL
(Thousands of barrels of 42 U. S. gallons)

	Feb., 1933 Total	Feb., 1933 Dy.av.	Jan., 1933* Total	Jan., 1933* Dy.av.	Jan.-Feb., 1933	Jan.-Feb., 1932
Refinery gasoline:						
Straightrun	13,705	490	15,118	488	28,823	31,798
Cracked	12,211	436	13,128	423	25,339	27,987
Natural gasoline:						
Production	2,543	91	2,876	93	5,419	6,490
Deduct losses	240	9	241	8	481	733
Benzol	88	3	95	3	183	227
Total motor fuel	28,307	1,011	30,976	999	59,283	65,769

*Revised.

INVITES REFINERS

S. S. Smith, manager of plants for the Shell Petroleum Corp., and president of the Natural Gasoline Association of America, attended the annual convention of the Western Petroleum Refiners the past week at Hot Springs, Ark., and invited all in attendance to be visitors at the three-day convention of the gasoline association in Tulsa, May 15 to 17.

NEWS FOR PETROLEUM REFINERS

Ethyl Gasoline Corp. to Open Great Sales Drive

Magazines, newspapers and billboards will be utilized during 1933 in the biggest sales drive ever launched by the Ethyl Gasoline Corp., it is announced at the offices of the company, owned jointly by General Motors Corp. and the Standard Oil Co. of New Jersey. The executives of the organization say the way to get business is to go after it through advertising. In the vast number of obsolescent cars still in use they see a promising field for sales expansion even before a general upswing ensues. It is estimated that there are more than 18,000,000 cars on the road today that are over two years old.

"Many companies have curtailed their advertising expenditure in view of the conditions with which business is faced," the announcement says. "The Ethyl Gasoline Corp. will invest almost twice as much money in advertising this year as it has in the past, including both our own program and our co-operative arrangements with the refiners who market our products. We are going forward on this scale despite the public's limited purchasing power, greater competition and improved nonpremium fuel."

Ethyl advertising will appear in 21 national magazines and in the 31 most important national, state and sectional farm publications in the country. These two groups of publications alone have a circulation of more than 29,750,000. In addition, 39 commercial and trade magazines will be used.

The newspaper campaign will be conducted in co-operation with the corporation's 104 refining licensees, which include practically all of the principal marketing organizations of the United States and Canada.

"This means that the biggest newspaper campaign ever put behind any single brand of gasoline will be concentrated on Ethyl in 1933," says this announcement. "It means that 1933 offers the greatest opportunity in the history of the petroleum industry to sell Ethyl Gasoline."

NEW MEXICO REFINERY

ARTESIA, N. Mex., Apr. 10.—The Transport Refining Co. will build a 32-mile pipe line from the Haspah Dome and the Seven Lakes fields in the lower San Juan Basin to a new refinery to be built at Prewitt, N. Mex. The refinery equipment will consist in part of a plant formerly located in Wyoming. T. D. Boyce is in charge of the work.

SIMMS MAKING IMPROVEMENTS

SHREVEPORT, La., Apr. 10.—Improvements being made by the Simms Oil Co. at its Smackover, Ark., refinery consist of a vacuum rerun unit and vapor recovery plant, and the addition of a vacuum tower to a tube still for the manufacture of road oils and asphalt. Completion of the new work and repairs is scheduled for June 1.

BRITISH COLUMBIA REFINERY

CHATHAM, Ontario, Apr. 8.—The Hi-Way Oil Co. has completed a 300-bbl. refining plant at South Westminster, near Vancouver, British Columbia. The company, understood to be backed by British capital, will bring in crude in its own tank cars, and has one 20,000-bbl. tank steamer to transport California crude to the plant.

Mid-Continent Refiners Will Investigate Feasibility of Co-operative Sales

HOT SPRINGS, Ark., Apr. 6.—The Western Petroleum Refiners Association in the final session of its annual meeting here this afternoon decided to investigate the feasibility of co-operative marketing in the sale of its products. The motion presented by C. M. Boggs, president of the Kanotex Refining Co., Arkansas City, Kans., authorizing the investigation was passed without opposition after Fayette B. Dow, Washington, D. C., counsel of the association, had reviewed the decision last month of the U. S. Supreme Court in the now famous Appalachian Coals, Inc., case. The last official act of the retiring president, George D. Locke, was the appointment of the investigating committee to consist of P. M. Miskell, general manager of the refining and marketing divisions of the Empire Oil & Refining Co.; Howard Bennette, newly elected president, and Mr. Dow. No time was set as to when the committee would report regarding its findings.

In the Appalachian Coals, Inc., case, Chief Justice Hughes, in handing down the decision of the court, reversed the decision of a lower court and held that the selling agency established by 137 coal producers did not violate the provision of the Sherman antitrust act and the agreement in itself was not illegal.

Mr. Dow, in his review of the decision, pointed out the similarity of distressed conditions within the oil and coal industries which in the latter industry were held to justify the decision to try out a plan of co-operative selling. Mr. Dow said he would not attempt to discuss whether or not a plan similar to that established by the coal producers would prove helpful in the oil business, but he was confident that the decision in the coal case did give the necessary legal sanction to such a plan should a group of refiners decide to give it a trial.

The matter of co-operative marketing has been discussed by Mid-Continent operators in the past but no attempt was ever made to formulate a definite plan, the assumption being that it would be held in restraint of trade. It was stated at the meeting that a group of small Pennsylvania refiners have had such a plan under consideration for some time and were awaiting the decision in the coal case before making a final decision in the matter.

The decision in the Appalachian case was published in the March 23, 1933, issue of The Oil and Gas Journal, page 11.

Premium Formerly Charged for "Super-Shell" Removed

W. J. Filer, vice president of Shell Eastern Petroleum Products, Inc., announces that the company is offering its former premium priced gasoline, "Super-Shell," at the price of "regular" gasoline, the 3-cent premium formerly charged for this product having been eliminated. The same grade gasoline was introduced by the Shell Petroleum Corp. throughout its marketing territory.

Mr. Filer says: "This company will market Super-Shell gasoline at prices formerly charged for Shell. This step is taken after a careful survey of marketing conditions throughout the East. On the one hand, price seems to be an increasingly important factor; on the other, gasoline marketers insist on making fantastic claims of 'premium gasoline' every time any slight improvement is made.

"The only way to combat both of these factors seems to us to be the sale of an established premium gasoline at 'regular gas' price. By so doing, we please both the thrifty motorist and the one who is willing to pay for real quality.

"I wish to assure those who may consider this plan as price cutting that it should be regarded as a substantial improvement in the quality of the product which we sell to the public at the 'regular' price, and is entirely consistent with our well-known policy of leading in quality. We continue to market Super-Shell Ethyl as a double premium product at a single premium price."

SHREVEPORT PLANT ACQUIRED

SHREVEPORT, La., Apr. 10.—The Williams Refining Co.'s 200-bbl. plant in Agurs, Shreveport, has been acquired by the newly organized Shreveport Refining Co., capitalized at $10,000. Dr. J. A. Shaw, supervisor of the minerals division of the State Department of Conservation; J. A. Bowden, who was with the Williams company, and W. R. Barstow are the principals in the new organization. All formerly were connected with the Calcoat-Shaw Oil Co., marketers, here. The plant, built in 1931 by the Southern States Refining Co., was taken over by J. A. Williams last January.

Swan-Finch Warren Plant Acquired by Sloan & Zook

WARREN, Pa., Apr. 10.—The Sloan & Zook Refining Co., of Bradford, Pa., has acquired the plant here of the Swan-Finch Refining Corp., and according to announced plans this refinery, which has been closed, will resume operations with 30 to 40 men employed. The plant originally was built by the Seneca Oil Works, of Warren, of which George P. Brockway was president. It was bought in 1928 by the Swan-Finch organization, which closed it down two years ago.

The new company, headed by R. T. Zook, president; W. J. Sloan, vice president and treasurer, and C. T. Rickerson, secretary, will transport Bradford crude to the refinery through United Refining Co. or National Transit Co. pipe lines.

Under the supervision of the Swan-Finch interests, the refinery was completely modernized, the only improvement necessary being the installation of a pipe still. Improvements, such as painting, etc., will get under way immediately.

The plant's daily capacity is about 1,000 bbls.

SELLING SOCONY POLISHES

The Standard Oil Co. of New York now is selling Socony-made polishes for furniture, woodwork and floors. They are being marketed in a "household pack" which carries a standard sized container of each of the three along with a package of specially woven polishing cloths. Retailing for $1.95 it will be offered by department, hardward, household utensil and other specialty stores.

Sawyer Planning to Build Refining Plant in Bolivar

BOLIVAR, N. Y., Apr. 10.—Plans for construction of a 500-bbl. refinery here by the Sawyer Refining Co., Inc., have been announced by Wallace E. Sawyer, Bolivar, president of the company, and crude oil is expected to be running to the new plant by July 15.

The Sawyer Refining Co., Inc., has taken over the Sawyer Refining Co., which, since last November, has been operating as a topping plant of 100-bbl. capacity on the Sawyer lease on the Chadwick farm, town of Wirt.

The new plant will be erected on the A. C. Smyth farm, just outside Bolivar on the Bolivar-Little Genesee highway. The site provides easy access to the Shawmut Railroad. Mr. Sawyer said the new plant would be a "complete refinery."

Officers of the new concern, in addition to Mr. Sawyer, are: Vice president, Thomas Hungerville of Smethport, Pa.; treasurer, Edmond Hungerford of Bolivar; and secretary, Ralph Bentley of Bolivar. Directors are: Mr. Sawyer, Mr. Hungerford, Fred L. Beckwith, Frank R. Beckwith and Ralph Sawyer, all of Bolivar; Mr. Hungerville and John E. Cather of Smethport, and Herbert J. Demcey and Harry E. Keller of Cuba, N. Y.

Derby Pipe Line Movement of Gasoline to Start Soon

WICHITA, Kans., Apr. 10.—Movement of gasoline from the Derby Oil Co.'s refinery here to the Derby terminal in McPherson, a distance of 60 miles, will begin as soon as pipe line facilities are completed. Derby will be the first Kansas oil concern to move motor fuel by this method. Derby is building considerable new pipe line. Also it has purchased the Hollow pipe line between Burrton and the Hollow Pool and is adding this to the Derby system. The gasoline pipe line system will be in operation in about two weeks, according to E. C. Moriarty, vice president.

From the terminal 1½ miles south of McPherson, situated on the Missouri Pacific tracks, Derby products will be shipped to Kansas, Nebraska and Colorado territory by tank car and truck. The Derby refinery in Wichita operates exclusively on Kansas crude.

START ON GREAT BEND PLANT

Construction work has been started in Great Bend, Kans., on the 800-bbl. refinery of the Falcon Refining Co., of which Henry Dickason, formerly of Denver, Colo., and Roy Miller, formerly of Wichita, Kans., are officials. The products of the refinery will be a low-grade gasoline, a high test gasoline, distillate, kerosene and fuel oil. No Ethyl Gasoline will be marketed. Contracts for crude have been signed and pledges have been made by firms in Barton County towns to buy the products of the plant.

OPERATE NEW PLANT

The Wichita Falls Refining Co., owned by Roy I. Carter and associates, has started operations in its 100-bbl. skimming plant. The company has two local filling stations and will market its output in and around Wichita Falls.

NEW TEXAS REFINERY

The Jacksboro Refining Co.'s 250-bbl. skimming plant at Jacksboro, in Jack County, is approximately 80 per cent completed and is expected to be in operation within another 30 days.

Ector County Test Now Holding the Spotlight; Possible New Pool in East Archer County

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Apr. 10.—Stanolind Oil & Gas Co.'s No. 1 Cowden, in Section 26, Block 43, Township 2s, T.&P. Survey, north offset to the Addis discovery in Ector County, is now holding the spotlight in West Texas. This test is due to be the next completed in this new producing area, sure to make a well. Bottom of hole is 3,935 feet. At 3,920 feet, approximately 6 inches of saturated lime was recovered, the remainder of the core having been lost. It is now reaming and will drill deeper before a test is made.

Stanolind Oil & Gas Co. and others' unit test, on the Todd ranch in Section 67, Block UV, G.C.&S.F. Survey, Crockett County, may be abandoned without being shot as formerly planned. The operators have been swabbing the test since it was treated with acid, and are still trying to decide whether a shot would be worth trying in an effort to make an Ordovician producer. Total depth was 8,041 feet, but it was plugged back to 7,720 feet before treating.

Humble Oil & Refining Co.'s No. 1 White and Baker, in Section 44, Block Z, T.C.R.R. Survey, west of the Yates Field in Pecos County, is now below 1,250 feet. This is another Ordovician test for the Permian Basin, and will be closely watched for developments.

Schleicher County Showing

Eastland Oil Co. and others' No. 1 Tisdale, in Section 29, Block M, G.H.& S.A. Survey, Schleicher County, struck a light showing of gas during the week at 5,925-28 feet, and is now shut down to run 4½-inch casing. The hole is open below 4,511 feet where 6¼-inch casing was set. Caving has been giving difficulty in drilling.

Reagan County

The Richmond Drilling Co. of Texon is to spud a test by April 15 on a block of acreage near Stiles in Reagan County, which has been assigned to the Wahlenmaier Petroleum Corp. of San Angelo. The test will be on the D. E. Hughes ranch, in the SE Section 23, Block F, C.&M. Railway Survey. The location was made last fall by another party who blocked the acreage, but recently turned it over to Wahlenmaier. T. N. Lawson of San Angelo will be interested in the test. Contract calls for drilling to 3,250 feet unless oil or gas in commercial quantities is found above this depth. This location is approximately 16 miles northwest of the Big Lake Field in Reagan County.

Changes in Allowables

Allowables in some of the West Texas fields were changed on April 6, while in some areas the allowables remained the same. The Yates Field in Pecos County was reduced from 61,450 bbls. to 60,450 bbls.; the Winkler County Field from 25,000 to 23,000 bbls. per day. Howard-Glasscock County remained at 16,000 bbls.; the Penn Pool in Ector County remained at 4,000 bbls.; Crane-Upton County remained at 17,000 bbls. and Reagan County at 20,000 bbls. The above reductions bring the daily allowable of the district down to 155,150 bbls. from the past daily amount of 158,350 bbls.

A hearing will be held by the railroad commission on the Crane-Upton area at Midland on April 12. On May 2 it will hold a hearing at San Angelo on the Big Lake Field of Reagan County and on May 3 will hold a hearing at Big Spring on the Howard-Glasscock County pools. The operators in the Crane-Upton area have been requested to come to the meeting prepared to submit the following data: (1) Estimated potential of each well based upon its present actual ability to produce. (2) Estimated amount of water each well will make on a 24-hour test. (3) Number of wells shut in, or not now being produced on each lease. Reason for such wells not being produced. (4) Present average daily production of oil and water of each well now being actually produced on each lease. (5) Lifting cost per barrel for each lease.

WICHITA FALLS

King and Krahenbuhl's No. 1 A. J. Ikard in the southeast corner of the north 60 acres of the west 160 acres of Section 1,889, T.E.&L. Survey, encountered an oil sand during the week at 989-92 feet and is now shut down at the latter depth having the best showing for making a producer in this area, with the possibility of opening another pool for East Archer County. Gravity of the oil is 37.6 degrees.

M. M. Bradley is drilling his No. 2 Ben W. Garvey, 5,700 feet east of the Ikard potential producer, also showing for a producer. If these two potential wells prove commercial producers they will open a large area to production for this part of the county. Continental Oil Co. and The Texas Company are the only two large companies holding acreage in the area, independents holding the majority of the acreage in the vicinity of the two tests.

The Texas Company's No. 1 Hansard in the F. Longardio Survey, Thornberry division, 5,000 feet northeast of the old Knox-Finley Pool and 8,000 feet northwest of the newly discovered 350-foot production, Clay County, made 25 bbls. of oil and 10 bbls. of water from sand logged at 1,140-48 feet. However, it passed up this sand temporarily to go to 1,850 feet, contract depth. If no further showings are encountered it will be plugged back to the first sand in an effort to make a commercial producer out of the test at that depth.

Connor & Son are cleaning out No. 2 M. K. Graham in the Sarah Tankersley Survey, Abstract 278, on the north side of the South Bend Pool, to deepen the test from 2,600 feet to 4,000 feet.

Continental Oil Co.'s No. 1 Primitive Baptist Church test, drilled in southwestern Young County during 1930-31 to a total depth of 4,833 feet but plugged back to the Caddo at 3,800 feet, has been treated with 250 gallons of acid with a load of 500 gallons of water and 150 bbls. of oil. When first completed it flowed 30 bbls. daily and was still making that amount of oil when treated. A test has not yet been made but it is expected to respond successfully to the treatment. It is in extreme wildcat territory with no offset tests yet drilled.

PANHANDLE

The Panhandle fields are still operating without any restrictions from the Railroad Commission. However, lack of market and voluntary proration has held the field to 45,406 bbls. per day during the week, with but a mere handful of operators producing their properties without restraint. Nominations for the field are now only 42,000 bbls. per day.

A hearing on the Panhandle Field gas area will be held by the Railroad Commission at the Texas Hotel, Fort Worth, on April 14, for the purpose of considering the adoption of rules and regulations for the prevention of gas and crude oil waste in the Panhandle district, with the exception of the area defined as the "West Panhandle gas field."

Wildcat Operations in West Texas

Week Ending April 10

BREWSTER COUNTY

Company, well, farm name, section and block—	Remarks
Joiner's No. 1 McIntire, 853 ft. from S and 2,590 ft. from E. Sec. 31, Blk. 353, W. J. Mitchell Sur.	T.D. 620 ft.

CONCHO COUNTY

Beasley et al's No. 1 Waring Estate, 400 ft. from N and E. Sec. 163, T.&N.O. Sur.	T.D. 2,586 ft.; pumping 5 bbls. oil per day and some water.

CRANE COUNTY

Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W lines of Sec. 197, Blk. F, C.C.S.D. R.G.N.G. Sur.	Drlg. 703 ft.

CROCKETT COUNTY

Chambers et al's No. 1 Hoover, 1,650 ft. N and 330 ft. from E. Sec. 1, Blk. FF, B.&B. Sur.	S.D. 2,105 ft.
Stanolind Oil & Gas Co. et al's No. 1 Todd, 1,370 ft. from N and 1,320 ft. from E. Sec. 67, Blk. UV, G.C.&S.F. Sur.	Swabbing tubing; making 45 gals. of water, 3 gals. of B.S.; T.D. 8,041 ft.

CULBERSON COUNTY

Miller Bros.' No. 1 fee, 1,980 ft. from N line and 660 ft. from E line of Sec. 61, Blk. 97, P.R.L. Sur.	Drlg. 505 ft.

DAWSON COUNTY

Ray Albaugh et al's No. 1 John Robinson, 1,320 ft. from N and W, Sec. 46, Blk. M, E.L.R.R. Sur.	Drlg. 230 ft.

ECTOR COUNTY

Cherry et al's No. 1 Johnson, 1,320 ft. from S line and 660 ft. from E line of Sec. 41, Blk. 43, Twp. 1s, T.&P. Sur.	S.D. 1,420 ft.
L. C. Harrison et al's No. 1 Addis, 330 ft. from N and 1,320 ft. from W. Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur.	Flowing average of 275 bbls. oil per day to tanks; T.D. 4,061 ft.
Landreth Prod. and The Texas Company's No. 1 Holt, 660 ft. from S line and 2,025 ft. from E line of Sec. 16, Blk. 42, Twp. 1s, T.&P. Sur.	Drlg. 500 ft.
Stanolind O. & G. Co.'s No. 1 Cowden, 330 ft. from S and 1,320 ft. from W. Sec. 26, Blk. 43, Twp. 2s, T.&P. Sur.	Casing 3,909 ft.; show oil 3,816-40 ft. and 3,850-61 ft.; increase at 3,901 ft.
Thomas et al's No. 1 Edwards, 330 ft. from S, 2,310 ft. from E. Sec. 38, Blk. 43, Twp. 2s, T.&P. Sur.	Set casing at 3,327 ft.
Fred Turner's No. 1-A Addis, 1,650 ft. from N line and 2,200 ft. from E line of Sec. 35, Blk. 45, Twp. 2s, T.&P. Sur.	Bldg. derrick.

FISHER COUNTY

Cranfill & Reynolds' No. 2 George, 330 ft. from N and W lines of NE of Sec. 200, Blk. 1, B.B.B.&C. Sur.	Drlg. 710 ft.
Cranfill & Reynolds' No. 3 B. F. Willingham (standing since March, 1931)	Swabbed 300 bbls.; T.D. 3,126 ft.
O'Donnell's No. 1 Pardue, 330 ft. from S and E lines of N half of SW Sec. 302, B.B.B.&C. Sur.	Top pay 3,104-24 ft.; est. 8 bbls. salt water daily; est. 40 bbls. oil on incomplete test; T.D. 3,124 ft.
Southern Oil Co.'s No. 1 Beavers, 330 ft. from W and 660 ft. from S of S half of SW Sec. 193, B.B.B.&C. Sur.	T.D. 415 ft.; setting 12¾-in. csg.

(Continued on Page 47)

COMPLETIONS IN WEST TEXAS

Howard County

F. H. E. Oil Co.'s No. 1 Dodge, top pay 2,695 feet, initial production 95 bbls. in 24 hours, shot with 640 quarts from 2,539-2,809 feet, total depth 2,867 feet.

Ward County

Rowan and Nichols' No. 1 Street, dry and abandoned, total depth 2,769 feet.

COMPLETIONS IN PANHANDLE DISTRICT

Carson County

Silk and others' No. 1-A Burnett, plugged and abandoned. Texas Interstate Pipe Line Co.'s No. 1-97 Burnett, gas pay 2,368-2,588 feet, initial production 22,700,000 feet of gas.

Gray County

Baldridge's No. 1 Catlin, top pay 3,115 feet, shot with 240 quarts from 3,052-3,171 feet, initial production 360 bbls. on pump, total depth 3,171 feet. Quicksand Oil Co.'s No. 2 Chapman, top pay 2,720 feet, initial production 350 bbls., total depth 2,725 feet. Skelly Oil Co.'s No. 1 Gethings, top pay 2,657 feet, shot with 125 quarts from 2,652-2,712 feet, initial production 61 bbls. on pump; total depth 2,716 feet. The Texas Company's No. 1 Gethings, total depth 2,905 feet, plugged back to 2,800 feet, top pay 2,736 feet, shot with 40 quarts from 2,733-2,800 feet and with 120 quarts from 2,737-98 feet, initial production 56 bbls. on pump.

Hutchinson County

Huber Petroleum Co.'s No. 1-C Johnson, top pay 3,032 feet, initial production 500 bbls. swabbing and flowing, total depth 3,032 feet.

Wheeler County

Devore and Robinson's No. 1 Sitter, top pay 2,558 feet, initial production 75 bbls. pumping, total depth 2,760 feet.

Two Tests in N. Y.-Pa. Gas Field Are Failures

WELLSBORO, Pa., Apr. 10.—The Cowanesque Gas Co.'s test for gas on the J. N. Leonard land in Farmington Township, Tioga County, was reported to be 6 feet in the Oriskany sand, the gas pay in this region, and no gas was found. Total depth was 3,914 feet.

Kerr & Kaufman's No. 1 Woodruff, in Allegany County, New York, was showing a little oil and gas at a depth not ascertainable, but the showing was passed up and drilling continued.

The Belmont Quadrangle Drilling Co. was reported to be considering the matter of drilling down to the Medina sand in its No. 1 Laura Chapman in Yates County, New York, which was dry in the Oriskany.

Renewed Hope for Proration in East Texas Area; Field Shut Down Awaiting Test of Key Wells

By L. E. BREDBERG

DALLAS, Tex., Apr. 10.—At 7 a. m., April 6, the East Texas Field, with some 10,000 producing wells, was shut down for a five-day period. This was later extended to not longer than April 21, Judge Randolph Bryant of Sherman granting the commission permission to take potential tests on the wells in the field, modifying a previous order and also granting a longer shut down than the five days allowed at first.

Preliminary orders drafted by the commission provides for the testing of 300 representative wells in the field. One-fifth of the key wells in each zone will be tested each day, all other wells in the field to remain closed while said wells are being tested. There are five major zones set out in the field for testing purposes.

Judge Bryant formerly granted an injunction to the Lucey Petroleum Corp. and others restraining the commission from opening all wells in the field at once for a two-hour open flow test, then shutting the field in entirely. This week he modified that order to allow the testing of key wells, at the above prescribed rate, also allowing for the shut down.

The owners of the wells will make the test, the commission men to gauge the well's flow, although the commission may also make tests or supervise them. Each well will be tested for two hours, flowing naturally through casing and tubing. Each hour's test will be made separately. This method of testing will give a better conception of the wells' actions and abilities, and furnish a better potential than if a record was kept on the two-hour flow alone.

Method of Testing

Key wells will be located as nearly as possible at the intersections of section lines with one additional well as near the center of the square mile as possible. The field has been divided into 179 sections of one square mile each for location of key wells.

Each well tested will be made to conform to standard surface equipment to be supplied by the owner. Testing the wells is to begin on Tuesday, April 11, and will take about five days to complete according to present plans. Several more days will be required in which to assemble the data, for calculating purposes, and promulgating a new proration order for the field.

Care is to be taken in testing wells on the west side or water side of the field in order to prevent any trouble from salt water encroachment. To prevent any trouble from salt water appearing in wells on this side of the field no wells having top of Woodbine sand below subsea level of 3,295 feet or in which the total depth is below subsea level of 3,305 feet, will be tested.

Tank Car Movement

During the 24 hours ending 7 a. m., April 10, there were only 439 tank cars reported moving crude oil and refined products out of the district. This is a great decrease from 10 days ago when 913 cars were moved out of the field. This decrease has been caused by the shut down which went into effect on April 6, and also because of the glutted market. Many tank cars have been standing on sidings in East Texas and along the Gulf Coast, with no market or takers for the oil which had been run from the field, most of it irrespective of all proration orders.

The "hot" oil market had apparently reached the saturation point before the field was shut down, and involuntary proration was being forced on the few who continued to overproduce their wells. These producers were gradually seeing their markets reach the overflowing state, where takers of the cheap oil could handle little if any more crude from the field, regardless of how cheap it was being sold at the well.

There may be a few operators in the field producing their wells during the recent shutdown, but the greater part of the oil now going out by tank cars is coming from lease and field storage. Tank car shipments are expected to shrink still further, if not being choked off almost entirely during the shutdown. Pipe lines will handle the bulk of the oil produced from the wells which will be tested from day to day until all the key wells have been flowed open and gauged.

Judge W. F. Robertson in the One Hundred Twenty-sixth District Court, issued restraining orders against two operators in the field on April 7 to prevent them from producing their wells during the shutdown. They were reported to have produced their leases on April 6 and 7, and the attorney general's department filed suit against them, requesting penalties of $1,000 per day for each day's production from each well. Other injunctions against violators were also sought by the commission.

With almost all of the operators in the field desirous of a shutdown until potential tests can be made and a new proration order issued, and with the other small percentage lacking a substantial market for their oil, it is believed that the entire field is now shut in, although perhaps a few violators who still have a market for their cheap oil may still be flowing their wells against orders. With the vast number of producers in the field, with the thickly wooded terrain lending cover to violators it is almost impossible to check all the wells or catch violators of the incessant type.

New Plan Approved

But little objection is heard against the commission's new plan of taking potential tests and allocating production in the field to the potential method, although many operators are desirous of acreage also playing a part in the new method of proration. Whether or not acreage will be considered will depend perhaps on the results of the potential tests. With a proration order written on the basis of allocating production in the field on the potential and acreage method the courts are expected to uphold such an order and the field will possibly be put on the road to a more tranquil existence. However, with nearly all of the operators wanting a change in conditions, and willing to accept any new plan of proration, just so the courts uphold it, conditions in the field are expected to be bettered immediately after execution of the new order.

Shutting in the field, plans for taking potentials preparatory to drawing up a new proration order, and a new and valid proration order looming as a great probability this time, has strengthened the former shaky price of 50 cents per barrel, has strengthened the morale of the operators in the field, and given a new lease on life to proration for East Texas. The commission hearing and plans for a new method of proration staved off a price cut when it seemed inevitable.

Shutting in the field during the past five days, and previous to taking of potential tests, will be in favor of those producers which have constantly violated, but offset producers which have seen their properties suffer because of drainage were agreeable to the shut down plan because they felt that such a shut down and potential test, followed by a new proration order, would react to the benefit of all producers in the field. The shut down will allow pressures to equalize throughout the field, such as advocated by J. S. Hudnall, petroleum engineer who testified at the Railroad Commission hearing during the past week. He proposed that one-fifth of the wells be opened during each five days, that corrections be made for wells with tapered tubing and that potentials of wells making 10 or more per cent water be figured from bottom hole pressure. He estimated that 80 per cent of the wells so produced are essentially alike.

Mr. Hudnall advocated a plan of allocation as follows: 30 per cent for potential, 30 per cent for bottom hole pressure, 20 per cent for sand thickness of structural position and 20 per cent for acreage, the latter to be optional to make the plan legal.

Locations and Completions

Field locations and completions offset each other in East Texas this week. There were 27 of each. Four wildcat tests and one wildcat location were abandoned, while locations were staked for three others.

T. C. Cardwell and others have a rig up for their No. 1 W. C. Wallace, to be located in the C. Burnett Survey, Cherokee County. C. H. Everett and others have derrick up for their No. 1 J. T. Goode in the David Rose Survey, approximately 2,000 feet south of the nearest producer in the Van Field, Van Zandt County. Petroleum Pipe Line & Storage Co. has a derrick up for its No. 1 Mrs. S. S. McGee lease located in the William Daniel Survey northeast of the Van Field in the same county.

The Loring Oil Co. abandoned its No. 1 F. M. Swearingen test in the Oliver Lund Survey, 1 mile southwest of Maydelle, Cherokee County, at a total depth of 5,400 feet. This was one of the deepest tests drilled adjacent to the producing area of the East Texas Field, and has been one of the most interesting wildcats in the district during the past few weeks.

One test was abandoned in Lamar County and one in Leon County. Wadley and Lyons abandoned their No. 1 Hall in the William McKee Survey, in the Jamestown area of Upshur County at a total depth of 3,800 feet. This area seems to have been definitely erased from the possible producing areas of the district several tests having proved dry during the past few months.

The test of Malone and others on the J. S. Williams farm, in the Jesse Crawford Survey, approximately 6,000 feet southeast of the nearest producer of southern Rusk County, was completed for an initial production of 36,000,000 feet. Total depth is 3,700 feet.

Murchison, LaRue and the American Liberty Oil Co. of Dallas are planning another test, from 2 to 3 miles west of Athens in Henderson County. Acreage has been assembled for the test which will go to the Woodbine sand.

East Central Texas Wildcats

Week Ending April 10

ANDERSON COUNTY

Company, well, farm name, section and block—	Remarks
W. L. Tarkington et al's No. 1 J. C. Beark, 150 ft. from N line, 250 ft. from E line of most westerly NE cor. of lease, John Trimmer Sur.	Top sand 1,453 ft.; base 1,488 ft.; small show oil and gas at 1,453-88 ft.; coring.

ANGELINA COUNTY

Crosbie et al's No. 1 John C. Davis, 150 ft. from N of center of tract and survey, John H. Graham Sur.	S.D. 1,195 ft.
J. C. Crosby et al's No. 1 Cameron Lbr. Co., 150 ft. from S line and 700 ft. from W line of 505-ac. tract, 5 miles SE of Zavalla	S.D. 20 ft.

CHEROKEE COUNTY

T. C. Cardwell et al's No. 1 W. C. Wallace, 330 ft. from S line and 330 ft. from W line of lease, C. Burnett Sur.	Rig up.
Hooper et al's No. 1 Doctor Overton, 330 ft. from N and E lines of tract and 330 ft. out of most easterly NE cor. of survey, Wesley Dikes Sur.	Tested salt water and oil; prepare to recement csg.; T.D. 3,656 ft.
L. J. Hopcroft et al's No. 1 J. R. Taylor, 2,600 ft. from E line and 2,900 ft. from S line of survey, G. M. Doherty Sur.	Derrick.
Mid-Tex Oil Co.'s No. 1 A. Pace (formerly Clopton), 288 ft. from N line and 330 ft. from most northerly E line of 40-ac. lease, Wesley Dikes Sur.	Swabbing; T.D. 3,665 ft.

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COMPLETIONS IN EAST TEXAS

North Gregg County

Fain & McGaha's No. 7 A. Tooke, top sand 3,630 feet, initial production 175 bbls. per hour through open tubing, total depth 3,650 feet. Gulf Production Co.'s No. 5 Fishburn, top sand 3,489 feet, initial production 80 bbls. per hour through three-quarters inch tubing choke, total depth 3,520 feet. Humble Oil & Refining Co.'s No. 11 H. M. Lawrence, top sand 3,624 feet, initial production 80 bbls. per hour through three-quarters inch tubing choke, total depth 3,664 feet; No. 8 G. W. Willingham, top sand 3,672 feet, initial production 68 bbls. per hour through three-quarters inch tubing choke, total depth 3,696 feet. Rajo Oil Co.'s No. 4 Barrett, top sand 3,652 feet, initial production 75 bbls. per hour through three-quarters inch tubing choke, total depth 3,671 feet. Swain-Holcomb and Hamilton's No. 1 Block 123, top sand 3,615 feet, initial production 30 bbls. in one-quarter hour through 1-inch tubing choke, total depth 3,647 feet.

South Gregg County

Atlantic Oil Producing Co.'s No. 10 S. G. Andrews, top sand 3,637 feet, initial production 148 bbls. per hour through casing, total depth 3,653 feet. Magnolia Petroleum Co.'s No. 11 J. Radford, top

sand 3,671 feet, initial production 168 bbls. per hour through open tubing, total depth 3,673 feet. Reserve Petroleum Co.'s No. 2 A. Godfrey, top sand 3,565 feet, initial production 88 bbls. per hour through open tubing, total depth 3,594 feet.

North Rusk County

Gulf Production Co.'s No. 4 O. R. Baton, top sand 3,579 feet, initial production 60 bbls. per hour through 4½-inch casing, total depth 3,656 feet; No. 13-A C. E. Christian, top sand 3,616 feet, initial production 70 bbls. per hour through three-quarters inch tubing choke, total depth 3,622 feet. Humble Oil & Refining Co.'s No. 82 Crim, top sand 3,622 feet, initial production 109 bbls. per hour through three-quarters inch tubing choke, total depth 3,642 feet. Humble Oil & Refining Co.'s No. 19-A S. S. Laird, top sand 3,643 feet, initial production 56 bbls. per hour through three-quarters inch tubing choke, total depth 3,689 feet; No. 4-B W. P. Moore, top sand 3,730 feet, initial production 75 bbls. per hour through three-quarters inch tubing choke, total depth 3,751 feet; No. 6-A J. E. Sexton, top sand 3,725 feet, initial production 65 bbls. per hour through three-quarters inch tubing choke, total depth 3,774 feet. Magnolia Petroleum Co.'s No. 6 N. Bean, top sand 3,522 feet, initial production 75 bbls. per day by heads, total depth 3,558 feet.

South Rusk County

Devonian Oil Co.'s No. 9 W. O. Alford, top sand 3,736 feet, initial production 38 bbls. in one-half hour through three-quarters-inch tubing choke, total depth 3,744 feet. Humble Oil & Refining Co.'s No. 6-A R. A. Barksdale, top sand 3,788 feet, initial production 34 bbls. per hour through three-quarters-inch tubing choke, total depth 3,794 feet; No. 11 J. E. Glover, top sand 3,700 feet, initial production 97 bbls. per hour through three-quarters-inch tubing choke, total depth 3,766 feet; No. 8-A J. H. Silvey, top sand 3,713 feet, initial production 75 bbls. per hour through three-quarters-inch tubing choke, total depth 3,719 feet; No. 16 J. H. Wooley, top sand 3,666 feet, initial production 75 bbls. per hour through three-quarters-inch tubing choke, total depth 3,686 feet. Malone and others' No. 1 J. S. Williams, top sand 3,630 feet, initial production 36,000,000 feet of gas, total depth 3,700 feet, Jesse Crawford Survey. Sun Oil Co.'s No. 7 R. J. Hendon, top sand 3,541 feet, initial production 15 bbls. per hour through open tubing, total depth 3,583 feet. Ward Oil Co.'s No. 17 E. S. Thrash, top sand 3,766 feet, initial production 73 bbls. per hour through 2-inch open tubing, total depth 3,810 feet.

Smith County

Sneed and others' No. 1 Church Lot, top sand 3,769 feet, initial production 40 bbls. in one-quarter hour through open tubing, total depth 3,773 feet.

Upshur County

W. C. Buntley's No. 1 Brawley heirs, top sand 3,718 feet, initial production 30 bbls. per hour through open tubing, total depth 3,720 feet. Travis and Weir's No. 1 L. P. League, top sand 3,636 feet, initial production 40 bbls. per hour through open tubing, total depth 3,641 feet.

WILDCAT COMPLETIONS

Cherokee County

Loring Oil Co.'s No. 1 F. M. Swearingin, top Pecan Gap 3,820 feet, base 4,170 feet; top Austin chalk 3,620 feet, base 3,860 feet; top sand 5,025 feet, base 5,080 feet; drill stem test 4,878 to 4,916 feet, tested dry; drill stem test from 4,922 to 4,951 feet, tested dry; drill stem test from 4,916 to 4,924 feet, tested 600 feet of salt water in 37 minutes, dry and abandoned, total depth 5,400 feet, Oliver Lund Survey. Elevation 387 feet.

Upshur County

Pitts and others' No. 1 H. Davis, derrick abandoned. Wadley and Lyons' No. 1 Hall, dry and abandoned, total depth 3,800 feet, top Pecan Gap 2,450 feet, base 2,966 feet; top sand 3,728 feet, William McKee Survey.

Lamar County

Doyle and Jondeau's No. 1 Martin, top Georgetown lime 1,975 feet, dry and abandoned, total depth 2,446 feet, Joseph Deck Survey.

Leon County

Leon County Oil Co.'s No. 1 John Morris, dry and abandoned, total depth 2,339 feet, Andrew F. McWhorter Survey.

Van Zandt County

Pure Oil Co.'s No. 2 H. P. Tunnell, initial production swabbing and flowing 22 bbls. per day, total depth 2,935 feet.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA

(Effective March 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier	Montebello	LaHabra, Coyote	Santa Fe Springs	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga
14-14.9	$ .55	$ .55	$ .55	$ .55	$ .55	$ .55	....	$ .55	$ .55	$ .55	$ .55	$ .55	....	$ .49	$ .49	$ .49
15-15.9	.55	.55	.55	.55	.55	.55	....	.55	.55	.55	.55	.55	....	.49	.49	.49
16-16.9	.55	.55	.55	.55	.55	.55	....	.55	.55	.55	.55	.55	....	.49	.49	.49
17-17.9	.55	.55	.55	.55	.55	.55	....	.57	.56	.57	.55	.55	....	.49	.50	.49
18-18.9	.57	.55	.61	.61	.60	.61	....	.59	.58	.59	.55	.57	....	.49	.52	.49
19-19.9	.59	.57	.63	.64	.62	.64	....	.61	.61	.61	.55	.59	....	.49	.54	.49
20-20.9	.61	.59	.64	.67	.64	.66	....	.62	.63	.63	.55	.61	....	.52	.56	.49
21-21.9	.63	.62	.66	.69	.66	.68	....	.64	.66	.65	.55	.63	$ .57	.55	.58	.51
22-22.9	.65	.64	.68	.71	.69	.70	....	.66	.65	.67	.57	.65	.59	.57	.60	.53
23-23.9	.67	.67	.70	.73	.71	.72	....	.68	.70	.69	.60	.67	.62	.60	.62	.55
24-24.9	.69	.69	.72	.75	.73	.73	$ .65	.70	.73	.71	.62	.69	.64	.63	.63	.57
25-25.9	.71	.72	.74	....	.75	.75	.68	.72	.75	....	.65	.71	.66	.66	.65	.59
26-26.9	.73	.74	.75	....	.77	.77	.70	.73	.77	....	.68	.73	.69	.68	.67	....
27-27.9	.75	.76	.77	....	....	.79	.73	....	.80	....	....	.74	.71	.71	.69	....
28-28.9	.77	.79	.79	....	....	.81	.75	....	.83	....	....	.76	.73	.74	.71	....
29-29.9	.79	.81	.81	....	....	....	.78	....	.84	....	....	.78	.76	.76	.73	....
30-30.9	.81	.84	.83	....	....	....	.81	....	....	....	....	.80	.78	.79	.75	....
31-31.9	....	....	....	....	....	....	.83	....	....	....	....	.82	.80	.82	....	....
32-32.9	....	....	....	....	....	....	.86	....	....	....	....	.84	.83	.85	....	....
33-33.9	....	....	....	....	....	....	.86	....	....	....	....	.86	.85	.87	....	....
34-34.9	....	....	....	....	....	....	.86	....	....	....	....	.88	.87	....	....	....
35-35.9	....	....	....	....	....	....	.86	....	....	....	....	....	.90	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	....	.92	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	....	.92	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	....	.94	....	....	....
39 and over	....	....	....	....	....	....	....	....	....	....	....	....	.96	....	....	....

Signal Hill—Met on same day by The Texas Company, Union Oil Co. and General Petroleum Co., and Associated Oil Co.

Huntington Beach—The Texas Company, Union Oil Co., General Petroleum Co. and Associated Oil Co. schedules stop at 26-26.9 degrees, 75 cents.

Seal Beach, Alamitos Heights—The Texas Company met all prices; Union Oil Co., General Petroleum Co. and Associated Oil Co. schedules stop at 26-26.9 degrees, 75 cents.

Athens, Rosecrans, Domingues—Union Oil Co. schedule stops at 35-35.9 degrees, posting 32-32.9 degrees, 85 cents; 33-33.9 degrees, 87 cents; 34-34.9 degrees, 89 cents; 35-35.9 degrees, 90 cents. Associated Oil Co. met Standard Oil Co. schedule; General Petroleum Co. met Standard Oil Co. prices, stopping at 32-32.9 degrees at 86 cents.

Torrance—Met by The Texas Company. Met by Associated Oil Co, General Petroleum Co. and Union Oil Co., up to 25-25.9 degrees, at 75 cents.

Inglewood—Met by Associated Oil Co. and General Petroleum Co.

Playa Del Rey—(Prices subject to 5 cents per barrel gathering charge. Met by Union Oil Co. schedule starting at 19 gravity.

Olinda-Brea Canyon—Met by Union Oil Co. Met by General Petroleum Co., up to 25-25.9 degrees at 75 cents.

Santa Fe Springs—Met by The Texas Company, General Petroleum Co., Union Oil Co. and Associated Oil Co.; schedules start at 24-24.9 degrees, 64 cents, and end at 35-35.9 degrees, 90 cents.

East Coyote—Effective March 5, Union Oil Co.: 14 to 16.9 degrees, 55 cents; 17-17.9 degrees, 57 cents, with 2 cents added for each degree upward to 24.24.9 degrees, at 71 cents.

Richfield—Met by The Texas Company; met by Union Oil Co. up to 25-25.9 degrees, at 75 cents.

Montebello—Met by Union Oil Co. up to 25-25.9 degrees, at 65 cents.

Kern River, Mount Poso, McKittrick, Sunset, Midway, Elk Hills, Buena Vista Hills—Effective March 5, Union Oil Co.: 11-13.9 degrees, 44 cents; 14 to 19.9 degrees, 49 cents; 20-20.9 degrees, 52 cents; 21-21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 63 cents; 25-25.9 degrees, 66 cents; 26-26.9 degrees, 68 cents; 27-27.9 degrees, 71 cents; 28-28.9 degrees, 74 cents; 29-29.9 degrees, 76 cents; 30-30.9 degrees, 79 cents. Associated Oil Co. scheduled in Midway, Elk Hills and Buena Vista Hills starts at 11 to 13.9 degrees, 44 cents; same as Union Oil Co. schedule from 14 to 29.9 degrees; 30-30.9 degrees, 79 cents. General Petroleum Co.: Effective March 5 in Midway-Sunset same as Associated Oil Co.; Fruitvale, Kern Front, Kern River, Mount Poso and Round Mountain, 49 cents for all grades.

Montebello—Met by Union Oil Co. up to 25-25.9 degrees, at 65 cents; The Texas Company's schedule in Montebello and North Whittier, 14 to 21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 63 cents; 25-25.9 degrees, 65 cents; 26-26.9 degrees, 68 cents.

Santa Paula—Union Oil Co., March 5, 14 to 19.9 degrees, 55 cents; 20-20.9 degrees, 56 cents, with 1 cent added for each degree upward to 25-25.9 degrees, at 61 cents, and then 2 cents added for each degree upward to 30-30.9 degrees, at 71 cents. The Texas Company posts similar schedule in Santa Paula and Shiells Canyon.

Lost Hills-Belridge—Met by Associated Oil Co. and Union Oil Co., with Union Oil Co. paying 44 cents for 11 to 13.9 degrees gravity.

Coalinga—Met by Union Oil Co. and Associated Oil Co. on March 5 and General Petroleum Co. on March 15, but latter company and Associated Oil Co. posted 44 cents for 11 to 13.9 degrees effective March 5.

Ventura Avenue—Associated Oil Co., March 5, 23-23.9 degrees, 58 cents, with 2 cents added for each degree up to and including 30-30.9 degrees at 74 cents. Effective March 15, General Petroleum Corp.

Orcutt—Union Oil Co., effective March 5: From 16 to 19.9 degrees, 49 cents; 20-20.9 degrees, 52 cents; 21-21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 63 cents; 25-25.9 degrees, 66 cents; 26-26.9 degrees, 68 cents.

Kettleman Hills—Effective March 5, Standard Oil Co., Union Oil Co. and Associated Oil Co.: 32 to 32.9 degrees, 66 cents, with 2 cents added for each degree upward to 38-38.9 degrees at 78 cents. Effective March 15, General Petroleum Corp.

Elwood—Prices f.o.b. ship—Standard Oil Co. of California, effective March 5: 33-33.9 degrees, 83 cents; 34-34.9, 85 cents; 35-35.9 degrees, 87 cents; 36-36.9 degrees, 89 cents; 37-37.9 degrees, 91 cents. Met by Union Oil Co.

Newhall, McKittrick and Kern River—Standard Oil Co. of California, 55 cents for all grades, effective March 5.

Wheeler Ridge—Standard Oil Co. of California, effective March 5: 14 to 20.9 degrees, 49 cents; 21-21.9 degrees, 50 cents; 22-22.9 degrees, 52 cents; 23-23.9 degrees, 54 cents; 24-24.9 degrees, 56 cents; 25-25.9 degrees, 58 cents.

Rincon—General Petroleum Corp., effective March 15: 22-22.9 degrees, 54 cents; 2 cents added for each degree upward to 30-30.9, at 70 cents.

Crude Oil Prices

(Continued from Page 37)

Fort Collins, Wellington and Greasewood, Colo., are on contract basis.

Florence (Jan. 18, 1933)	.33
Dutton Creek, Wyo. (Jan. 18, 1933)	.34
Rock Creek, Wyo. (Jan. 24, 1933)	.46
Frannie, light (Jan. 18, 1933)	.31
Frannie, heavy (Jan. 18, 1933)	.30
Salt Creek	
See Stanolind Mid-Continent price schedule	
LaBarge.....Mid-Continent gravity scale	
Big Muddy (Jan. 18, 1933)*	.40
Grass Creek (Jan. 18, 1933)	.62
Grass Creek, heavy (Dec. 15, 1932)	.45
Elk Basin, light (Jan. 18, 1933)	.62
Lance Creek (Dec. 16, 1932)	.92
Poison Spider (Mar. 5, 1931)	.70
Hudson (June 3, 1931)	.65
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 23, 1930)	1.10
Osage (Jan. 18, 1933)	.52
Lost Soldier (Apr. 12, 1932)	.80
Hamilton Dome (Dec. 16, 1932)	.25
Torchlight (Jan. 18, 1933)	.62
Greybull (Jan. 18, 1933)	.62
Cat Creek (Jan. 18, 1933)	.62
Pondera (Nov. 7, 1932)	.60
Sunburst, Mont. (Nov. 7, 1932)	.75
Hogback, N. Mex. (Jan. 18, 1933)	.65
Lea County, N. Mex. (Jan. 20, 1933)	.30
Maljamar (Jan. 20, 1933)	.25
Artesia-Jackson (Jan. 20, 1933)	.30

Note—Salt Creek, Cat Creek, Dry Creek, Dallas-Derby, Hudson, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective January 20, posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro.

*Posted by Continental Oil Co.

Middle Western States

OHIO OIL CO.

(Effective January 18, 1933)

Lima (Jan. 10, 1933)	$ .70
Wooster	.70
Illinois	.62
Indiana	.40
Princeton	.62
Plymouth	Shut in
Western Kentucky	.67
Midland, Mich. (Dec. 31, 1932)*	.95
Somerset, Ky. (Jan. 19, 1933)	.46
Muskegon, Mich. (Mar. 27)	See note

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Muskegon: All companies pay $1 per barrel effective March 27. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and delivered through own pipe line.

Mexico

Panuco*	$ .44

*F.o.b. ship, based on January transactions and exclusive of production and export taxes and bar dues.

Canada

Ontario (Jan. 18, 1933):	
Petrolia*	$1.75
Oil Springs*	1.82
Turner Valley†:	
Crude oil, 31°-35.9° (Jan. 24, 1933)	1.41
Crude oil, 36°-49.9° (Jan. 24, 1933)	1.90
Crude oil, 50° up (Jan. 24, 1933)	2.41
Discolored naphtha (Jan. 24, 1933)	2.58
Crude naphtha (Jan. 24, 1933)	2.82

*Imperial Oil, Ltd. †Imperial Oil, Ltd. and Regal Oil & Refining Co.

East Central Texas Wildcats

(Continued from Page 45)

Wilson & Stubbs' No. 1 L. Robert, 450 ft. from S and 150 ft. from W line of lease, J. B. Wolfin Sur. ..... Prepare to deepen; T.D 3,400 ft

ELLIS COUNTY

Paris Oil Co.'s No. 1 O. S. Bain, 1,500 ft. from S line and 300 ft. from W line of 60-ac. lease, R. M. Williams Sur. ..... Drlg. 1,010 ft.

FANNIN COUNTY

Luther Keen et al's No. 1 Steen, center of survey, 3 miles SW of Ladonia, John Wills Sur. ..... Drlg. 1,385 ft.

FREESTONE COUNTY

Clyde Creighton's No. 1 Holley Bros., 854 ft. from W line and center of N and S lines of lease, A.B.M. Sur. ..... T.D. 4,507 ft.

GREGG COUNTY

Bay Oil Corp.'s No. 5 J. M. Wheeler, 150 ft. due N of Pelphrey Bros.' No. 1 Wheeler, D. Ferguson Sur. .... Derrick.

H. & F. Oil Co.'s No. 2 M. Jackson, 330 ft. from S line and center of E and W lines of 16.66-ac. lease, G. F. Penn Sur. ..... Derrick.

Gulf Production Co.'s No. 14 S. C. Fishburn, 330 ft. from S line and 1,650 ft. from E line of 200-ac. lease and survey, F. W. Johnson Sur. ..... Rig up.

J. T. Hill's No. 1 J. M. Christian, 5,800 ft. from S line and 4,350 ft. from W line of survey, G. W. Hooper Sur. ..... Rig up.

Lion Oil & Refining Co.'s No. 2 Evans, S offset to Sinclair Prairie's No. 10 Williams, P. McAnnelly Sur. .. Derrick.

Mansell et al's No. 2 Walker, 520 ft. from N line, 1,450 ft. from E line of M. Dillard Sur., Blk. 54 .... Drlg. 3,526 ft.

McWhorter, receiver's No. 2 Nellie Jobe, 462 ft. from S line and 312 ft. from E line of lease in P. W. Warraner Sur. ..... Waiting on cmt. to set 3,545 ft.

J. C. Meanor's No. 4 W. D. Lacy, SW offset to Blue Star's No. 3-G, E. L. Walker Sur. ..... Washing; T.D. 3,561 ft.

Mid-Field Oil Co.'s No. 1 Martin, 1,520 ft. from N line, 2,330 ft. from W line of survey, W. P. Chisum Sur.. Running csg.; T.D. 3,762 ft.

Rajo Oil Co.'s No. 3 Barrett, 378 ft. from N line and 330 ft. from W line of lease, B. W. Witcher Sur. .. Drlg. 2,900 ft.

Ray Drilling Co.'s No. 2 Tubbs, 150 ft. from W line of lease in D. Sanches Sur. ..... Waiting on standard rig; will not flow; T.D. 3,585 ft.

L. W. Tarkington's No. 1-A Mrs. A. M. Greggston, 187 ft. N of Johnston's No. 1 Greggston and center of N and S lines of lease, M. Dillard Sur. ..... Derrick.

HILL COUNTY

Spikes et al's No. 1 Holman, 150 ft. from NW cor. of 100-ac. tract, one-half mile S of Mt. Calm, Latham Sur. ..... Prepare to spud.

HOPKINS COUNTY

E. P. Corley's No. 1 Jumper ..... Moving in rig; T.D. 1,630 ft

Culberson & Lynch's No. 1 Louis Stribling, 150 ft. from NW cor. of tract and lease, Thomas Norris Sur. .. Rig up.

Hager & Ashby's No. 1 H. Smith, 1,220 ft. from S line and 915 ft. from W line of 415-ac. tract, J. A. Croft Sur. ..... Drlg. 3,717 ft.

HUNT COUNTY

Johnson & Russell et al's No. 1 N. A. Fregarg, 150 ft. from W line, 500 ft. from S line of 30-ac. tract, 3 miles E of Campbell, Wm. Glass Sur. ..... Drlg. 4,038 ft.

KAUFMAN COUNTY

Sky-Bentley-Brewer et al's No. 1 J. B. Hunter, 300 ft. from S line and 150 ft. from SE line of 500-ac. tract, 4 miles S of Terrell, R. Sowell Sur. ..... Drlg. 700 ft.

LIMESTONE COUNTY

C. C. Curtis et al's No. 1 Emma Daniels, 150 ft. from W line and 150 ft. from S line of 42.5-ac. tract in Pedro Varela Sur. ..... Set surface csg. 60 ft.

RED RIVER COUNTY

Ajo Oil Co.'s No. 1 Nickels & Daniels, center of S 730 acres of 1,808-ac. tract, 8 miles N of English, Hugh B. Shaw Sur. ..... Bldg. derrick.

RUSK COUNTY

Brawn, receiver's No. 1 Lide, center of 4-ac. lease, S. P. Hollingsworth Sur. ..... Drlg. 3,656 ft.

Devonian Oil Co.'s No. 17 R. A. Motley, 947 ft. from N line and 3,120 ft. from E line of lease, William Ellien Sur. ..... Rig up.

A. P. Gary's No. 2 Redwine, center of Blk. No. 9, in Juan Ximenes Sur. ..... Prepare to run csg.; T.D. 3,535 ft.

Griffin & Barnes' No. 1 fee, 13 ft. from S and W lines of 3-ac. tract, J. B. De Cadena Sur. ..... Waiting on cmt. to set.

H. B. W. Oil Co.'s No. 3 Redwine, 150 ft. from E line and center of Payne's No. 1 Redwine, Juan Ximenes Sur. ..... Derrick.

Humble Oil & Refining Co.'s No. 31 L. D. Crim, 620 ft. from N line and 5,670 ft. from E line of survey, E. G. Sevier Sur. ..... Drlg. 2,006 ft.

Humble Oil & Refining Co.'s No. 6-C H. Sexton, 330 ft. from S and W lines of lease, McCabe Sur. ..... Drlg. 884 ft.

Humble Oil & Refining Co.'s No. 18-A S. S. Laird, 789 ft. from E line and 3,230 ft. from S line of survey ... Drlg. 1,862 ft.

Humble Oil & Refining Co.'s No. 5-B J. E. Sexton, 1,800 ft. from N line and 3,150 ft. from W line of survey, T. J. Martin Sur. ..... Drlg. 3,162 ft.

Humble Oil & Refining Co.'s No. 8 W. B. Key, 530 ft. from S line and 990 ft. from W line of lease and survey, G. W. Fields Sur. ..... Drlg. 2,719 ft.

Jordan & Ramsay's No. 1 L. W. Prior, 330 ft. from N line and 667 ft. from E line of 53-ac. lease, Walker Pettit Sur. ..... Rig up.

Kimble & Acre's No. 1 Frederick, 150 ft. from S line and center of E and W lines of 10-ac. lease, Juan Ximenes Sur. ..... Derrick

Olson Bros.' No. 5 J. T. Brown, 200 ft. from N line and 700 ft. from W line of lease, M. J. Pru Sur. .... Derrick.

Parks et al's No. 1 Frederick, 4,400 ft. from W line and 450 ft. from N line of Juan Ximenes Sur. .... Waiting on cmt. to set; T.D. 3,485 ft.

R. L. Pinkston's No. 1 L. J. Pinkston, center of a 1-ac. lease, F. Cardova Sur. ..... Waiting on cmt. to set; T.D. 3,810 ft.

Ross Seward's No. 1 Burton, J. J. Y'Barbo Sur. ..... T.D. 3,387 ft.

Snyder et al's No. 2 Stewart, 174 ft. NW of No. 1 and 190 ft. SE of C. L. Archer's No. 1 J. H. Stewart, John Womack Sur. ..... Derrick.

Stanolind and Pure Oil Co.'s No. 2 W. H. Siler, 150 ft. from N line and 215 ft. from W line of W. B. Perry Sur. ..... Drlg. 3,440 ft.

SMITH COUNTY

Long Drilling Co.'s No. 3 G. A. Turner, D. W. Campbell Sur. ..... Derrick.

TITUS COUNTY

Bandua Newberry et al's No. 1 First State Bank, 1,391 ft. from S and 2,410 ft. from E line of James T. Box Sur. ..... Drlg. 1,900 ft.

UPSHUR COUNTY

Conservative Oil Co.'s No. 3 Eva O'Byrne, 330 ft. from N and E lines of 20-ac. lease, D. Ferguson lease..... T.D. 2,746 ft.; plugged back to 1,575 ft.; waiting on cmt. to set.

B. F. Phillips' No. 2 Carrie Brooks, 275 ft. from N and E lines, and 330 ft. from W line of 18.07-ac. lease, J. F. Davidson Sur. ..... Drlg. 3,200 ft.

Wadley and Evans' No. 1 W. S. Jones, 330 ft. from S and E lines of 100-ac. lease, James M. Dunn Sur. ... T.D. 3,690 ft.; swabbed salt water; swabbing.

Wadley-Evans-Lyons et al's No. 1 Shuttlesworth, 330 ft. from NW cor. of Rosier and Pendleton's 50-ac. lease, J. M. Dunn Sur. ..... Rig up.

Waggoner & McConnell's No. 4 Williams, 300 ft. from W line and center of N and S lines of 22-ac. lease, McKinley & Williams Sur. ..... T.D. 3,630 ft.; tested salt water; cmtd. back to 3,620 ft.; S.D.

VAN ZANDT COUNTY

C. H. Everett et al's No. 1 J. T. Goode, 150 ft. from N and E lines of tract, 2 miles S of Van, David Rose Sur. ..... Derrick.

Gulf Oil Co.'s No. 1 Gillentine, 150 ft. from S and E lines of E 4 acres of 42-ac. tract in Nacogdoches County School Land Sur. ..... Rig up.

Manning & Collins' No. 1 Mrs. Mollie High, center of 5-ac. tract, 2 miles NW of Myrtle Springs in William H. Bunch Sur. ..... Derrick.

Peden-Olson's No. 1 W. S. Brannon, 205 ft. from N and 160 ft. from W lines of 45-ac. tract, 2½ miles N of John Goodman Sur. ..... T.D. 1,250 ft.; pumped and flowed 36 bbls. first 12 hours.

Petroleum Pipe Line Co.'s No. 1 Mrs. S. S. McGee, 173 ft. from N and W lines of 53-ac. tract in Blk. No. 2, William Daniel Sur. ..... Derrick.

Pure Oil Co.'s No. 3 D. O. Mayo, 200 ft. N of S line and 225 ft. E of W line of D. O. Mayo 39.5-ac. tract, J. Prado Sur. ..... Drlg. 2,196 ft.

Pure Oil Co.'s No. 7 L. M. Brawner, 970 ft. N of most southerly S line and 250 ft. E of most easterly W line of L. M. Brawner 147.9-ac. tract, John Walling Sur. ..... Drlg. 2,525 ft.

Pure Oil Co.'s No. 2 R. M. Butler, 150 ft. from N and 793 ft. from W lines of 39.16-ac. tract in David Rose Sur. ..... Drlg. 1,700 ft.

Roy Stumpff's No. 1 M. I. Riggs, 169 ft. from E line and 250 ft. from S line of tract No. 2 and 330 ft. from E line of lease, 4 miles NE of Van, William Daniel Sur. ..... Cored from 1,228-34 ft.; small show of oil.

Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... T.D. 3,850 ft.; skid 50 ft. W and set 10-in. csg. at 181 ft.; waiting on cmt.

WOOD COUNTY

Hull & Short's No. 1 T. H. Peterson, 600 ft. from S line and 300 ft. from E line of 320-ac. tract and survey, 4 miles E of Mineola, W. B. McNutt Sur. .... Drlg. 3,290 ft.

Wildcat Operations in West Texas

(Continued from Page 44)

GARZA COUNTY

F.H.E. Oil Co.'s No. 1 Stoker ..... T.D. 2,909 ft.

GLASSCOCK COUNTY

R. T. Helms' No. 1 Hilger, 330 ft. from N line and 330 ft. from E line of Sec. 18, Blk. 34, Twp. 3s; T.&P. Sur. ..... Drlg. 440 ft.

Humble Oil & Refining Co.'s No. 1 Washer, 330 ft. from N line and 330 ft. from E line of Section 20, Blk. 33, Twp. 2s, T.&P. Sur. ..... Rigging up rotary.

Lawson's No. 2-B Edwards, 330 ft. from S and W, Sec. 16, Blk. 33, Twp. 2s, T.&P. Sur. ..... T.D. 2,976 ft.; half full sulphur water at 2,952 ft.

HOWARD COUNTY

M. D. Bryant et al's No. 1 L. C. Denman, 3,310 ft. from S and W lines of Sec. 10, Blk. 30, Twp. 1s, T.&P. Sur. ..... Underreaming at 715 ft.

Eppenauer et al's No. 1 Leatherwood, C of SE of NW, Sec. 25, Blk. 33, Twp. 1n, T.&P. Sur. ..... Material on ground.

Merrick-Lamb's No. 6 Chalk, 1,650 ft. from N line and 330 ft. from W line of Sec. 135, Blk. 29, W.&N.W. Sur. ..... Drlg. 810 ft.

Mid-Continent Pet. Co.'s No. 2 Denman, 330 ft. from S and E of Sec. 10, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 1,425 ft.

Myers et al's No. 1 Denman, 2,305 ft. from S and 2,320 ft. from E, Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. ..... Cmtd. 8¼-in. csg. 1,504 ft.

Mid-Continent Oil & Gas Co.'s No. 1 Denman, 990 ft. from S and 330 ft. from E, Sec. 10, Blk. 30, Twp. 1s, T.&P. Sur. ..... T.D. 2,813 ft; putting on pump.

Plymouth Oil Co.'s No. 3 Kloh-Abrams, 1,650 ft. from N and 2,310 ft. from W line of Sec. 5, Blk. 32, T.&P.R.R. Sur. ..... Rig up to deepen.

Sinclair Prairie Oil Co.'s No. 1 Denman, 330 ft. from N line and 330 ft. from W line of Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. ..... Spudding.

Sinclair Prairie Oil Co.'s No. 6 Dodge, 330 ft. from S line and 330 ft. from W line of Sec. 11, Blk. 30, Twp. 1s, T.&P. Sur. ..... Moving in material.

Sinclair Prairie Oil Co.'s No. 5 Dodge, 2,310 ft. from N and 330 ft. from W, Sec. 11, Blk. 30, Twp. 1s, T.&P. Sur. ..... Shot 300 qts. from 2,645-2,815 ft.; flowed 140 bbls. first 12 hrs.

Southern Oil Corp.'s No. 1 Williams, 430 ft. from N and 330 ft. from W of S 123 acres of W half Sec. 43, Blk. 30, Twp. 1n, T.&P. Sur. ..... Half full of salt and sulphur water to plug; T.D. 3,004 ft.

Jack Wallace et al's No. 1 Scott, 990 ft. from N and 330 ft. from E lines of Sec. 93, Blk. 29, W.&N.W. Sur. ..... Drlg. 710 ft.

IRION COUNTY

Bristow et al's No. 2 Nutt, 2,550 ft. N, 1,000 ft. W, Sec. 6, Gonzales County School Lands Sur. ..... S.D. 904 ft.

Perry Fox's No. 1 W. C. Lawhorn, 200 ft. from N and 500 ft. from W of Sur. No. 731 ..... Drlg. 110 ft.

Straughn et al's No. 1 Kaiser, 1,930 ft. from N and 1,300 ft. from W, Sec. 49, H. Cooper Sur. ..... Fishing 1,110 ft.

JONES COUNTY

Condor Pet. Co.'s No. 1 Holt, 1,900 ft. from S and 1,800 ft. from W, Sec. 4, Blk. 20, T.&P. Sur. ..... Moving in machine.

Dyer's No. 1 Odom, 200 ft. from S and 170 ft. from W of N 320 acres, G. Zumwalt Sur. ..... Moving in tools.

Johnson's No. 1 Huddleston, 165 ft. from S and W of N half of N half of Sec. 39, Blk. 18, T.&P. Sur. ..... Running casing 2,505 ft.

Shaheen Oil Co.'s No. 1 Sandlin, 1,320 ft. from S and E lines of Sec. 8, in Mrs. Louisa Matthews Sur. No. 7.. Drlg. 450 ft.

Smart & Reynold's No. 1 Reynolds, 2,500 ft. from N and 150 ft. from W, Sec. 2, W. T. Scott Sur. No. 3... Fishing 1,474 ft.

Southern Oil Co.'s No. 1 Swann, 1,000 ft. from E and 900 ft. from S. of I. Miley Sur. ..... Drlg. 2,403 ft.

LOVING COUNTY

L. & M. Pet. Corp.'s No. 1 Wheat, 2,310 ft. SW, 990 ft. SE, Sec. 71, Blk. 1, W.&N.W. Sur. ..... Cellar.

Eppenauer Drlg. Co.'s No. 1-A Victor, 330 ft. from SW and 338 ft. from SE of NW of N half Sec. 4, Blk. 3, W.&N.W. Sur. ..... Rigging up standard tools

Goldman et al's No. 2 Allen, 330 ft. from NW, 2,310 ft. from SW, Sec. 99, Blk. 1, W.&N.W. Sur. ..... Rig.

Goldman et al's No. 1 Reagan-McElvain, 330 ft. from NE, 2,310 ft. from NW, Sec. 84, Blk. 1, W.&N.W. Sur.. Cellar.

Martin et al's No. 1 Wheat, 990 ft. from SW and SE, Sec. 83, Blk. 1, W.&N.W. Sur. ..... S.D. 4,090 ft.

Thomas' No. 1 Wheat, 2,310 ft. from NW, 990 ft. from NE, Sec. 82, Blk. 1, W.&N.W. Sur. ..... T.D. 4,050 ft.; trying to straighten hole.

PECOS COUNTY

Bennett et al's No. 1 Powell, 330 ft. from SW and SE. Sec. 76, Blk. 16, H.&G.N. Sur. ..... Drlg. 1,490 ft.

California Co.'s No. 2 Tippett, 475 ft. W and 1,296 ft. N from SW cor. of Sec. 2, Robinson Sur. ..... T.D. 1,449 ft.; T.P. 1,408 ft.; may use acid.

Cardinal Oil Co.'s No. 16 E. Tippett, 5,280 ft. from S and 150 ft. from W of E half of W half Sec. 40, Blk. 194, G.C.&S.F. Sur. ..... T.D. 550 ft.; pumps 20 bbls. fluid day, 7 per cent water.

Cardinal Oil Co.'s No. 3-G Tippett, 600 ft. from S and 330 ft. from E of No. 3 Tippett, Sec. 61, Blk. 194, G.C.&S.F. Sur. ..... T.D. 303 ft.

Cochran et al's No. 1 Pecos Valley Co., 1,650 ft. from SE and SW lines of Sec. 94, Blk. 4, H.&T.C. Sur. .... Drlg. 1,165 ft.

Humble Oil & Ref. Co.'s No. 1 White-Baker Co., 1,320 ft. from N and E lines of Sec. 44, Blk. Z, T.C.R.R. Sur. ..... Cmtd. csg.; T.D. 842 ft.

Kimberlin et al's No. 1 B. D. Gregg, 2,488 ft. from NW and 150 ft. from NE, Sec. 101, Blk. 10, H.&G.N. Sur... Location.

Wahlenmaier et al's No. 1 Monroe, 6,040 ft. W and 330 ft. N from SE cor. of Sec. 41, Blk. 1, L.&G.N. Sur. ... S.D. 447 ft.

Winfield et al's No. 1 Eaton, 1,170 ft. from NE and 1,490 ft. from SE, Sec. 35, Blk. 3, H.&T.C. Sur. ..... T.D. 1,637 ft.; shot 80 qts. from 1,593-1,633 ft.; flowed 74 bbls. first 24 hrs.

REAGAN COUNTY

Big Lake Oil Co.'s No. 3-C University, 710 ft. from S and 2,410 ft. from E, Sec. 12, Blk. 2 ..... Flowed 2,073 bbls.; T.D. 8,800 ft.

Big Lake Oil Co.'s No. 9-C University, 2,410 ft. from N and 765 ft. from E, Sec. 12, Blk. 2 ..... Drlg. 7,769 ft.

Big Lake Oil Co.'s No. 10-C University, 2,025 ft. from S and 375 ft. from W, Sec. 26, Blk. 9 ..... Cmtd. csg. at 2,880 ft.

Big Lake Oil Co.'s No. 11-C University, 2,300 ft. from S line and 2,140 ft. from E line, Sec. 12, Blk. 2, University Sur. ..... Bldg. derrick.

Continental Oil Co.'s No. 7-B University, 1,980 ft. from N and 660 ft. from W, Sec. 34, Blk. 9 ..... Drlg. 6,943 ft.

Continental Oil Co.'s No. 8-B University, 1,300 ft. from S and 1,775 ft. from W, Sec. 34, Blk. 9 ..... Drlg. 6,736 ft.

Noel T. Lawson's No. 1 Hughes, 1,980 ft. from S line and 1,980 ft. from E line of Sec. 33, Blk. F, C.&M. Sur.... Moving in material.

J. P. Williams et al's No. 1 Scott, 1,650 ft. from N and 330 ft. from W, Sec. 179, Blk. 1, T.&P. Sur. ..... Drlg. 1,850 ft.

REEVES COUNTY

Cordova Union Oil Co. et al's No. 1 Wright, 1,320 ft. from S and W, Sec. 58, Cassell's Sur. ..... S.D. 3,705 ft.

Hugo Frosis et al's No. 1 S. B. Greenman, 330 ft. from NE and 2,310 ft. from SE lines of Sec. 21, Blk. 3, H.&G.N. Sur. ..... Rigging up.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 519 ..... S.O. 2,417-20 ft.; S.D. 2,600 ft.

John Castor's No. 1 Hall, 330 ft. from S and W, Sec. 149, E.T.R.R. Sur. ..... Spudded.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ..... S.D. 5,329 ft.; slight show gas at 5,923 ft.

Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,303 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... Underreaming; T.D. 6,170 ft.

SCURRY COUNTY

Heinzleman et al's No. 1 Hood, 436 ft. from N and 489 ft. from E, Sec. 87, Blk. 2, H.&T.C. Sur. ..... Running csg. at 1,150 ft.

TOM GREEN COUNTY

Hancock et al's No. 1 Reed, 330 ft. N and 1,670 ft. W of SW cor. of C. Schoner Sur. but in Mason & Perry Subd. No. 59 ..... S.D. 105 ft.

WARD COUNTY

Abell Bros.' No. 2 Sloan, 990 ft. from NE and NW, Sec. 24, Blk. 5, H.&T.C. Sur. ..... T.D. 2,600 ft.; will plug back.

Atlantic-Penn's No. 3 Bennett, 330 ft. from SE line and 2,310 ft. from SW line of Sec. 14, Blk. 34, H.&T.C. Sur. ..... Cmtd. csg. at 2,295 ft.

Atlantic Oil Prod. Co.'s No. 1 University, 330 ft. S and E, Sec. 3, Blk. 16 ..... Skid rig 100 ft. N and prepare to drill third hole.

Atlantic Oil Prod. Co.'s No. 1 Blank-Camp, 1,320 ft. from NW and SW Sec. 14, Blk. 34, H.&T.C. Sur. ..... T.D. 2,884 ft., sand; 1,400 ft. sulphur water 36 hrs. 2,880-84 ft.; shot 120 qts. 2,705-2,730 ft.; no results; shot 80 qts. 2,590-2,630 ft.; flowed 56 bbls.; to run tubing.

George Bentley et al's No. 1 C. Bergman, 330 ft. from NE line and 2,310 ft. from NW lines of Sec. 26, Blk. 5, H.&T.C. Sur. ..... Drlg. 1,160 ft.

George Bentley et al's No. 1 A. Emory, 1,830 ft. from NE line and 2,310 ft. from NW line of Sec. 26, Blk. 5, H.&T.C. Sur. ..... Drlg. 585 ft.

W. A. Black et al's No. 1 Ann B. Gordon, 990 ft. from NW and 330 ft. from NE lines of Sec. 6, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,139 ft.

Bradford's No. 1 Beatty, 1,650 ft. from NW and 330 ft. from SW. Sec. 3, Blk. 34, H.&T.C. Sur. ..... Drlg. 855 ft.

Bradford et al's No. 1 Emery, 2,970 ft. from NE and 990 ft. from NW, Sec. 26, Blk. 5, H.&T.C. Sur. ..... Rig up.

Sundy et al's No. 1 Bennett, 2,310 ft. from NW and SW Sec. 16, Blk. 34, H.&T.C. Sur. ..... Cleaning out 2,632 ft.

Appenzer Drlg. Co.'s No. 1 University, 330 ft. from N and 660 ft. from E of S half of Blk. 16 ..... Moving in material 100 ft.

Gerber O. & G. Co.'s No. 1 Stubbs, 330 ft. from S, 990 ft. from W, Sec. 9, Blk. 3, B.&B. Sur. ..... Cellar

Graham Corp.'s No. 1 Bennett, 2,310 ft. from NE line and 330 ft. from SE line of Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,320 ft.

Gulf Prod. Co.'s No. 16 Hutchings, 1,982 ft. from S and 1,650 ft. from W, Sec. 5, Blk. F ..... Drlg. 2,625 ft.; flowing by heads.

Gulf Prod. Co.'s No. 17 Hutchings, 330 ft. from W line and 1,151 ft. from S line of Sec. 5, Blk. A, G.&M.M.B.&A. Sur. ..... Drlg. 585 ft.

Gulf Prod. Co.'s No. 20 O'Brien, 990 ft. from S line and 660 ft. from W line of Sec. 6, Blk. F, G.&M.M.B.&A. Sur. ..... Rigging up standard tools.

Messenger and Wadsworth's No. 1 Hardage and Wilson, 330 ft. from SW and 330 ft. from SE, Sec. 11, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,630 ft.

Moran et al's No. 1 Reynolds, 170 ft. from SE and SW of NW 80 of NE half Sec. 13, Blk. 5, H.&T.C. Sur.. T.D. 990 ft.; S.D.

Rector-Plains' No. 1 Monroe, 1,320 ft. from SE line and 330 ft. from NE line of Sec. 21½, James Ross Sur. No. S.F. 7,666 ..... Drlg. 417 ft.

Skelly Oil Co.'s No. 2 Brillhart, 1,320 ft. from SE line of Sec. 12, Blk. 34, H.&T.C. Sur. ..... Cmtd. csg. at 946 ft.

Stanolind Oil & Gas Co.'s No. 1 Whitlock, 495 ft. NE. 1,750 ft. SE. Sec. 14, Blk. 34, H.&T.C. Sur. ..... Waiting orders; T.D. 2,515 ft.

Sturm and Simms' No. 2 Jones (old well drilled deeper), 1,650 ft. from NE and 330 ft. from SE, Sec. 25, Blk. 39, P.S.L. Sur. ..... Rig up to deepen.

G. R. Thomas et al's No. 2 John B. Bennett, 2,310 ft. from SE and 1,650 ft. from NE lines of Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,622 ft.

Thompson's No. 1 Johnson, 2,310 ft. from SW and 330 ft. from NW, Sec. 9, Blk. 34, H.&T.C. Sur. ..... Flowing 50 bbls. oil per day with tools in hole; T.D. 2,351 ft.

Wahlenmaier Pet. Corp.'s No. 1 Bergman, 2,310 ft. from NE line and 1,650 ft. from SE line of Sec. 39, H.&T.C. Sur. ..... Moving in machine.

WINKLER COUNTY

Colonial Oil Co.'s No. 1 State vacancy, 330 ft. E and 198 ft. N of NW cor. Sec. 3, Blk. 77, P.S.L. Sur. ..... Shot 40 qts. 2,953-73 ft.; T.D. 2,983 ft.; cleaning out.

Richardson et al's No. 1-B Scarborough, 990 ft. from S and 1,980 ft. from E, Sec. 18, Blk. 74, P.S.L. Sur. .... Fishing; T.D. 2,734 ft.

Wildcat Operations in Texas Panhandle

Week Ending April 10

CARSON COUNTY

Company, well, farm name, section and block—	Remarks:
The Texas Co.'s No. 2-B Garner, 990 ft. N and E, Sec. 95, Blk. 4, L.&G.N. Sur.	Rigging up cable tools.
Texas Nat. Gas Co.'s No. 5-S Schaffer, 1,425 ft. S, 1,490 ft. W, Sec. 69, Blk. 3, L.&G.N. Sur.	Rig.
Texoma Nat. Gas Co.'s No. 4-S Schaffer, 1,534 ft. S, 1,325 ft. E of SE Sec. 46, Blk. 4, L.&G.N. Sur.	Drlg. 900 ft.
Texoma Nat. Gas Co.'s No. 1 Gores, 1,320 ft. from S and 1,327 ft. from E lines of SE Sec. 43, Blk. 4, L.&G.N. Sur.	Cmtd. 6⅝-in. csg. 2,447 ft.
Union Pet. Co.'s No. 3 Cooper, 330 ft. N, 310 ft. E SE. Sec. 5, Blk. 9, L.&G.N. Sur.	Cellar.

CHILDRESS COUNTY

G. V. McClintock et al's No. 1 B. F. Moore, C Sec. 47, F. P. Knott Sur.	Drlg. 237 ft.
Massy & Peters' No. 1 O. L. Tucker, 150 ft. S and W lines of Sec. 4, F. P. Knott Sur.	Rig up standard tools.

COLLINGSWORTH COUNTY

Tittle, Cochran et al's No. 1 Boyles, 150 ft. S and E of Sec. 90, Blk. 14, H.&G.N. Sur.	Crooked hole 145 ft.

GRAY COUNTY

Sack & Barber's No. 1 Back, 660 ft. from S, 330 ft. from W, Sec. 140, Blk. 25, H.&G.N. Sur.	S.D. 2,964 ft; tested 9,540,000 ft. of gas.
Baldridge O. Co.'s No. 1-B Melton, 330 ft. from N and E of SW, Sec. 94, Blk. B-2, H.&G.N. Sur.	T.D. 3,174 ft; T.P. 3,167 ft; spraying 4 to 5 bbls. per hr.
Gordan Burch's No. 1 Laugham, 990 ft. S, 330 ft. E Sec. 1, W½ NE, Sec. 1, Blk. B-3, H.&G.N. Sur.	S.D. 2,743 ft.
Sam Danner's No. 1 Cobb, 330 ft. S and W NE, Sec. 164, Blk. 3, L.&G.N. Sur.	T.D. 3,384 ft; T.P. 3,345 ft; shot; no test.
Dolomite Prod. Co.'s No. 1 Sailor, 330 ft. N and E, Sec. 111, Blk. 3, L.&G.N. Sur.	T.P. 3,133 ft; T.D. 3,230 ft; shot and C.O.; no test.
Gray County Prod. Co.'s No. 1 Huselby, 330 ft. from S and W, E½ NW, Sec. 55, Blk. 25, H.&G.N. Sur.	T.D. 2,790 ft; pay 2,625-35 ft. and 2,755-76 ft; fishing.
Mazda-Shell's No. 4 Coombs-Worley, 990 ft. from N line 330 ft. from E line, Sec. 35, Blk. 3, L.&G.N. Sur..	Rig.
Ochiltree et al's No. 1 Hughey, 300 ft. S, 330 ft. E E half SE, Sec. 129, Blk. 3, L.&G.N. Sur.	T.D. 3,257 ft; T.P. 3,170 ft; shot with 100 qts. from 3,170-3,240 ft.; C.O.
Parton Holt's No. 4 Morse, 660 ft. from N and E of E half SW, Sec. 5, Blk. 26, H.&G.N. Sur.	T.D. 2,804 ft; P.B. to 2,630 ft; pumps 7 bbls. day; may shoot.
Saunders et al's No. 2 Sullivan, 322 ft. from W, 231 ft. from NE, 160 ft. S, 264 ac. of N¼, Sec. 136, Blk. 3, L.&G.N. Sur.	Will plug back to 2,275 ft. and shoot.
Sinclair Prairie Oil Co.'s No. 1-E Combs-Worley, 330 ft. from S and E, Sec. 34, Blk. 3, L.&G.N. Sur.	T.D. 3,084 ft; T.P. 2,988 ft; flowing 165 bbls. per day.
Skelly Oil Co.'s No. 1 C. Thut, 330 ft. from S line, 330 ft. from W line, SW Sec. 1, H.&G.N. Sur., Blk. 1.	Drlg. 3,420 ft; tested 3,500,000 ft. of gas.
Sun Oil Co.'s No. 1-B Combs-Worley, 330 ft. S and E of SW Sec. 34, Blk. 3, L.&G.N. Sur.	T.D. 3,050 ft; T.P. 3,010 ft; flowing est. 85 bbls. per hr.
Tedesco-Bell O. & G. Co.'s No. 4 Morse, 990 ft. N and W SE, Sec. 1, Blk. 26, H.&G.N. Sur.	Drlg. 2,262 ft.
Paul Tharp's No. 1 Short, 330 ft. from N and W of Sec. 2, Blk. 1, H.&G.N. Sur.	T.P. 2,962 ft; T.D. 3,070 ft; shot and S.D. for connection.
L. L. Travis et al's No. 1 Crossman, 990 ft. W, 330 ft. S of W½ Sec. 97, Blk. B-2, H.&G.N. Sur.	S.D. 2,935 ft.
Sam Travis' No. 1 Back, 330 ft. S and E E half NE, Sec. 44, Blk. 25, H.&G.N. Sur.	Drlg. 2,250 ft.
Warner Oil Co.'s No. 1 Webb, 660 ft. from S and W of W 80 of N½ Sec. 42, Blk. 25	Drlg. 526 ft.
Weltzel Oil Co.'s No. 2 Morse, 330 ft. from S and E of N half NW, Sec. 67, Blk. 25, A.&G.N. Sur.	T.D. 2,675 ft.; plugged back to 2,285 ft.; to set csg.
Wilcox O. & G. Co.'s No. 22 Combs-Worley, 330 ft. N and E, W½ Sec. 35, Blk. 3, L.&G.N. Sur.	Bldg. rig.

HEMPHILL COUNTY

Hoover's No. 1 Hoover, 350 ft. from N, 1,200 ft. from E, G. S. Hood Sur.	Drlg. 5,360 ft.

HUTCHINSON COUNTY

Alexander's No. 1 Cockrell, 330 ft. N and E of E 80 of S 160, Sec. 3, Blk. M-2, T.C. Sur.	Prepare to shoot; est. 70 to 100 bbl. well before shot; T.D. 3,029 ft.
Badger Oil Co.'s No. 5 Lewis, 2,278 ft. from S, 330 ft. from W, Sec. 18, Blk. L, E.L.&R.R. Sur.	Bldg. rig.
W. E. Means et al's No. 1 Pond, 330 ft. S and E, N½ of E 165½ acres, Sec. 3, Blk. M-21, T.C.R.R. Sur.	Bldg. rig.
Joe Murphy's No. 1 Watkins, 440 ft. from N and W of N half, Sec. 13, Blk. M-21	T.P. 2,922-40 ft.; T.D. 2,959 ft.; cmtd. 5 3/16-in. csg. at 2,880 ft.
Ryan Consolidated's No. 3 Johnson, tract No. 9, Mary Whitley Sur.	O.W.D.D.; T.D. 2,951 ft.
H. Steckel's No. 1 J. A. Whittenburg (Amerada), 430 ft. from S line, 990 ft. from W line, Sec. 37, T.C.R.R. Sur.	T.P. 2,930 ft; cementing broken pipe; T.D. 2,998 ft.
H. Stekol's No. 4-D G. A. Whittenburg, 450 ft. from N line, 990 ft. from W line, Sec. 38, Blk. M-23, T.C.R.R. Sur.	Bldg. rig.
Texilvania Oil Co.'s No. 1 Halle, 330 ft. S, 990 ft. W, Sec. 14, Blk. 1, E.L.R.R. Sur.	T.D. 2,953 ft; to set csg.; gas show 2,915 ft; oil show 2,953 ft.

MOORE COUNTY

Canadian River Gas Co.'s No. 3-A Perkins, 3,350 ft. S of most northerly NE cor, 300 ft. W of E line, Sec. 54, Blk. 47, H.&T.C. Sur.	Drlg. 2,373 ft.
Shamrock Oil & Gas Co.'s No. 1 Burnett, 660 ft. from S, 330 ft. from W, Sec. 359, Blk. 44, H.&T.C. Sur.	S.D. 4,572 ft.

ROBERTS COUNTY

Chicken Creek Oil Co.'s No. 1 Ledrick, 330 ft. N and W, Sec. 55, Blk. C, G.&M. Sur.	Recmtng. csg.; T.D. 4,980 ft.

WHEELER COUNTY

Delaney et al's No. 1 Sitter, 330 ft. from S and W of E half NE, Sec. 33, Blk. 24	Est. 15,000,000 ft. gas; S.D. 3,711 ft.
Helena O. & G. Co. et al's No. 1 Below, C NE SW, Sec. 59	Drlg. 1,579 ft.
Osborne et al's No. 2 Sloss & Admire, 330 ft. from N line and 1,650 ft. from E line of NE Sec. 47, H.&T. C. Sur., Blk. 25	T.D. 1,767 ft.; standardizing.
B. M. Rhodes' No. 1 Noel, 330 ft. S and E NE, Sec. 54, Blk. 24, H.&G.N. Sur.	T.P. 3,480 ft; T.D. 3,482 ft; putting on pump.
Rogers & Harner's No. 1 J. O. Clark, 990 ft. S and W of Sec. 6, Blk. 24, H.&G.N. Sur.	Rig.

Oil Men Have Confidence in This Equipment

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A McCormick-Deering Tractor, equipped with crawlers, pulling a welding outfit—one of the many jobs these tractors are handling along the Iraq pipe line.

International Trucks are transporting pipe and supplies across the rocky desert country, as the picture at the right shows. This is a 3-ton Model A-5 International stringing pipe through rough lava country, characteristic of much of the going along the Iraq line. The famous International Harvester service follows these trucks and tractors, protecting them in their work on this great construction project.

INTERNATIONAL HARVESTER

New Deal in Oklahoma When Governor Signs the New Proration Bill With Teeth in It

By W. A. SPINNEY
Staff Correspondent, Oklahoma Fields

The new proration law passed on April 7 is expected to become effective by the middle of this week with the signature of Governor Murray, and the Oklahoma City Field is expected to resume producing on April 11, under the new rules and regulations. The enforcement of the new proration law in Oklahoma is expected to aid the industry and have a stabilizing effect on production. The present proration enforcement organization is expected to stay in authority for a while to help through the period of potential taking in the prorated areas in the State.

Oklahoma's daily production for the week ending April 8 shows a decline from the previous week of approximately 52,000 bbls. daily. The daily estimated average for the seven days was 406,950 bbls. Production of the most important pools was as follows:

Pool—	Bbls. per day
Bowlegs	9,405
Bristow-Slick	11,200
Burbank	10,000
Carr City	4,870
Earlsboro	13,020
East Earlsboro	16,565
South Earlsboro	1,920
Little River	16,745
Oklahoma City	52,335
St. Louis-Pearson	17,750
Seminole	10,755
Tatums	3,600
Total	201,656
Others	185,370
Grand total	386,940

Enormous Gas Well

One of the largest gas wells ever drilled in Pontotoc County, was completed in the Fitts Pool, during the week. W. A. Delaney and others' No. 1 Richards, NW cor. SE Section 30-2-7, was estimated to be making between 50,000,000 and 60,000,000 feet of gas a day from the Cromwell sand at 1,647-94 feet. It is the third gas horizon found in the well. The well also found approximately 25,000,000 feet of gas from 1,280-1,306 feet. It is the direct east offset to the discovery gas well in the area drilled by the same operators.

Interest in this area was shown when a number of leases offered for sale at the last lease sale of the Five Civilized Tribes were bought at auction.

Another wildcat test was started in the area southeast of the gas wells. The Choctaw Oil & Gas Co.'s No. 1 Thompson, SW cor. SE SW Section 1-1-7, was spudding. This test is located on a block of 960 acres in Section 1 and 2-1-7, and 35 and 36-2-7.

Other operators interested in the area include E. H. Moore, with leases in Sections 28, 29, 31, 32 and 34-2-7, amounting to 1,800 acres. The Continental Oil Co. has a block in Sections 1, 2, 11 and 12-1-7, and in Section 34-2-7, consisting of approximately 2,240 acres of leases. These are the larest leaseholders in the area east and southeast from the discovery well.

E. H. Moore has made a location for No. 1 Wirick, SE cor. SW Section 29-2-7.

Good Well in Southern Seminole

In the south end of Seminole County, Stanolind Oil & Gas Co. and others' No. 1 Palmer, NW Section 36-6-7, is showing to be a 2,500-bbl. well from the Wilcox sand at a total depth of 4,051 feet. It is estimated that around 1,700 bbls. a day is coming from the Wilcox sand and around 800 bbls. a day from the Simpson sand.

The first location staked on the townsite of Sasakwa is W. J. Peters and others' No. 1, on Block 2, on the townsite. It is located in approximately CNL NE cor. NW SW Section 36-6-7. It is about half a mile southeast from the discovery well of the Stanolind Oil & Gas Co. and others' which is estimated to be a 2,500-bbl. well, from both the Simpson and Wilcox sands.

New Well in West Seminole

After a period of inactivity the West Seminole Field in Seminole County, has a new producer. The well is Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 8 Chase, C8L N half SE Section 29-9-6. It found oil in the Wilcox sand at 4,079-4,109 feet and after cleaning out made 33 bbls. of oil an hour for an 11-hour period. It was shut in and will be shot.

Surveying for Pipe Line

Interest in Oklahoma is returning to Noble and Logan Counties where wildcat wells are drilling. The Sinclair Prairie Oil Co.'s No. 1 Jerome, SW cor., Section 15-20-2w, a wildcat test 1½ miles east of the discovery well in the Wentz Pool, in Noble County Field, found the top of the Mayes lime at 5,038 feet, the top of the Woodford lime at 5,057 feet and was drilling at 5,100 feet. It found a showing of oil in lime at 5,052 feet.

The Shell Petroleum Corp. and others' No. 1 Whitten, C SE SE, Section 7-20-2w, was drilling at 4,200 feet.

The Shell Petroleum Corp. has surveyed a right of way for a 6-inch pipe line from the Wentz Field in Noble County, southwest of Perry, to connect with its main pipe line system in the Tonkawa area, which runs north and south, a distance of about 20 miles, to determine the cost.

The wildcat test of the Shell Petroleum Corp. and others' No. 1 Faulkner, C SE NW, Section 11-15-4w, Logan County, on a unitized block of acreage, has cemented surface casing and was preparing to drill deeper.

The Gypsy Oil Co. and others' No. 1 McConnell, C NE SE, Section 28-17-4w, Logan County wildcat, has completed the rig and was rigging up rotary tools.

Keokuk Falls Development

The development in the Keokuk Falls area in northern Seminole County may be slow on account of the fact that there is no need to bring in a large flush supply of crude oil at present and the added fact that the extent of the structure is doubtful. Some express the opinion that the producing area of the pool will be limited to a few 10-acre locations. A number of Wilcox sand dry holes have been drilled in the territory surrounding this well, the discovery well of which found its production in the Misener sand, above the Wilcox.

The next well expected to reach the pay horizon is the Barnsdall Oil Co.'s No. 1 Deere, SW cor. NW NW, Section 36-11-6, about a mile northeast of the discovery well, and on a short term lease. It was drilling at 4,200 feet.

The Carter Oil Co. and others' No. 1 Canard, C S half SW SE, Section 36-11-6, was drilling at 1,500 feet and is the direct north offset to the discovery well.

Roxana Pool Defined?

The Shell Petroleum Corp. probably has defined the producing area of the School Land sand in the old Roxana Pool, in Logan County. The company's No. 6 Sebronck, SE cor. SW NE, Section 30-19-4w, found a hole full of water in the School Land sand at 6,258 feet and it was drilled deeper to the Siliceous lime at 6,570-6,608 feet, where it is being abandoned without finding any showing of oil or gas. This is the first well to miss the oil production in the School Land sand. It was an old Wilcox sand producer that was drilled deeper.

Oklahoma City Shut In

The Oklahoma City Field was shut in on April 5 until the new proration law is signed by the governor, and new potentials can be taken on all the wells in the field. At a hearing before the Oklahoma. Corporation Commission, D. R Knowlton, Phillips Petroleum Co. engineer, testified that a survey was made of 10 of that company's wells that are producing from the Wilcox sand, to show that the present pressure was 1,350 pounds. He stated he believed that within one month the pressure would have declined to 1,000 pounds and that many of the wells would be unable to flow if the then current rate of withdrawals were continued.

He said that several months' natural flow of the wells could be saved by reducing the flow of the wells and preventing the withdrawal and waste of natural gas. He presented a report showing that the present potentials on the wells are fictitious and that by producing on such a basis, there is an unwarranted waste of gas and gas energy.

Phillips Petroleum Co.'s Ciger, Day and Unruh leases, with one well on each lease, had an average potential of 15,055 bbls. a day per lease as of November, 1931. Tests made during the month of March, 1933, show their average potential to be 907 bbls. a day per lease. They have been producing on the 1931 basis and the gas-oil ratio has increased to 40,000 feet of gas to 1 bbl. of oil.

Should the wells be cut back to the present potential, they would have an allowable of 472 bbls. per lease instead of the present allowable of 11,744 bbls. per lease and the gas production would be reduced from 156,587,000 feet per well to 18,867,000 feet. He also stated that he believed there were a number of similar wells in the field.

Mr. Knowlton also said that an immediate shut down of the wells until potential tests could be made would be beneficial to all the wells in the Wilcox sand zone, since it would aid in stabilizing pressure. He also said that oil wells high on structure were becoming gas wells because of the migration of gas. Later on these wells will again produce oil.

He said it was impossible to estimate the amount of gas that had been withdrawn from the field during the last few months, but estimated that 75 per cent of it was wasted.

A number of operators with production in the Wilcox sand area of the Oklahoma City Field conferred with the Oklahoma Corporation Commission and the proposal was made that the entire field be shut in pending the taking of new potentials under the proposed new proration law.

The commission ordered the entire field shut in April 5, at 7 a.m. A previous order issued April 1 shut down all the Wilcox sand wells. Opponents of the shutdown point to the fact that at least 80 wells in the field were drilled through both the Wilcox sand and Simpson sand zones. The Simpson sand zone is making considerable water which is increasing at a rapid rate. Under the first order some of the wells were on production while others were not. When some wells are on production and others shut down many believe it permits migration of oil, gas and water.

Report on Gas Wastage

In the preliminary report of the Bureau of Mines on gas wastage in the

The Oil Man's Calendar

April

13-15 — Tulsa, Petroleum Industry Electrical Association.

20-21 — Cleveland, Ohio, National Petroleum Association, Cleveland Hotel.

May

15-16-17—Tulsa. Natural Gasoline Association of America, Mayo Hotel.

17-18-19—Tulsa, American Petroleum Institute Mid-Year Meeting. Mayo Hotel.

18-19—Roanoke, Va., Virginia Oil Men's Association, Patrick Henry Hotel.

22-28—Houston, Tex., Oil Equipment & Engineering Exposition, Convention Hall.

June

2-3—Bradford, Pa., National Petroleum Association, Fire Marshals.

12-16—Chicago, Ill., tenth annual meeting, American Oil Burner Association, Stevens Hotel.

25-30—Chicago "Engineering Week" sixth Midwest Engineering and Power Exposition.

26-30 — Chicago, Ill., annual meeting, American Society for Testing Materials, Stevens Hotel.

July

22-29—Washington, D. C., International Geological Congress.

September

20-22—Atlantic, City, N. J., National Petroleum Association, thirty-first annual meeting, Traymore Hotel.

25—Chicago, Natural Gas Department, American Gas Association.

October

24-26—Chicago, Ill., fourteenth annual meeting, American Petroleum Institute.

December

4—New York, Fourteenth Exposition of Chemical Industries, Grand Central Palace.

Oklahoma City Field, it is said that it is impossible to estimate the amount of gas produced from the Wilcox sand and Simpson sand zones in that field except when applying the gas-oil ratio. These zones are the largest oil producers in the field at the present time and wells therein have the highest gas-oil ratios. The greatest gas wastage is in those zones.

The report stated that even on the basis of known figures, the approximate waste cannot be determined. Most of the gas has gone through the gasoline plants and the natural gasoline extracted from it and a small part of the residue sold to consumers in the field and to distributing commercial gas lines in the field. There is only one trunk gas pipe line serving the field, the Oklahoma Natural Gas Co.'s line, which takes only a relatively small amount of gas for distribution in its system.

Maximum demand for gas for use as fuel in the field will not exceed 75,000,000 feet a day throughout the year, the report says. Maximum demand for the month of March did not exceed 50,000,000 feet a day, although the production of gas is estimated at 750,000,000 feet a day.

The total gas consumed for field operations up to October, 1932, the preliminary reports estimate in excess of 47,000,000,000 feet. This was during the busiest period of drilling operations. At one time there were more than 250 wells drilling in the field, with batteries of three and four boilers. Other demands for gas during the same period would not approximate the same amount of gas, it was estimated.

It is expected the completed report of the Bureau of Mines will be published within the next month.

Pipe Line Activities

The second link of the Phillips Petroleum Co.'s new 8-inch pipe line was completed during the week from Yale to Burbank, in Oklahoma. The pipe line is approximately 210 miles long and runs from the Oklahoma City Field to Thrall, Kans., where it joins the company's carrier to the Kansas City refinery.

The first link of this pipe line from the Oklahoma City Field to Yale, Okla., was completed about three weeks ago and oil is now being handled through it. Tests on the second link of the line were made during the week and regular shipments through this part of the line are expected to start this week.

The Phillips Petroleum Co. has been running considerable oil from the Oklahoma City Field to storage near Yale and when shipments start through the second link it is believed the company intends to fill its storage tanks in the Burbank Field, pending the completion of the pipe line, to Thrall, Kans.

The Wilcox Oil & Gas Co. has started construction work on two 55,000-bbl. tanks at its farm northeast of the Oklahoma City Field. It already has five 55,000-bbl. tanks there, which are being used as a central storage battery. About two weeks ago the company completed a pipe line linking this tank farm with the Consolidated Pipe Line Co. and has been transporting crude oil through this line to its refinery at Bristow.

The Champlin Refining Co. has started construction work on eight 55,000-bbl. tanks in the NW Section 2-22-6w, east of Enid, Okla., near the company's refinery. The company recently purchased two 55,000-bbl. tanks from the Mid-Co Oil Corp. in the Billings Field. The company has been getting most of its crude supply from the Oklahoma City Field, through its 8-inch pipe line.

Southern Oklahoma

Southern Oklahoma is becoming active as the Tatums area in Carter County has a revival after finding another well. The Dapfine Oil Co.'s No. 2 Majors, SE cor. NE SE Section 25-1s-3w, is showing for a producer from sand at 2,385-2,446 feet. It was drilling deeper at 2,471 feet. New locations staked in the area include the Dapfine Oil Co.'s No. 1 A. Majors, SE cor. NW SE Section 25-1s-3w, and Wirt Franklin Petroleum Corp.'s No. 1 Burton, NE cor. SW SE Section 31-1s-2w. Samedan Oil Co.'s No. 2 Curtis, NE cor. SE NE Section 25-1s-3w, is a rig, and offsets a 750-bbl. well. Trevlyn Oil Co.'s No. 1 Majors is a rig on the ground.

Northwest of the Tatums Field, Boring and others' No. 1 Riddle, NE cor. NW SW Section 4-1s-3w, a wildcat well that found 10,000,000 feet of gas at 2,038 feet, is shut down waiting for cement.

In Stephens County interest is in the Navajo Oil & Gas Co.'s No. 1 Martin, SE cor. SW NW Section 18-1-5w, on the Cruce structure. The company is moving in material and digging a water well, before drilling the deep test.

Recent Leasing Activities

A number of lease deals have been made recently in Custer, Oklahoma, Canadian, Washita and Lincoln Counties.

An attempt is being made to form a community block in Townships 15-4 and 15-5, north of the West Chandler Pool in Lincoln County. Companies owning acreage in the area include, Gypsy Oil Co., in Section 7-15-5; Stanolind Oil & Gas Co., Atlantic Oil Producing Co., Deep Rock Oil Corp., all in Section 6-15-5; Minnehoma Oil Co. and Atlantic Oil Producing Co., in Section 7-15-5; Deep Rock Oil Corp., in Sections 12-15-4, and 1-15-4; Magnolia Petroleum Co. and Atlantic Oil Producing Co., in Section 12-15-4.

In Custer County, the Indian Territory Illuminating Oil Co. has released about 1,000 acres of its 4,000-acre block centering around Section 20-14-15w, and is retaining the balance of this block. It is also paying the lease rentals on its block in Section 9-13-20w.

In Oklahoma County, the Mid-Kansas Oil & Gas Co. has surrendered about 4,000 acres of the original 6,000-acre block purchased several years ago from the Ramsey Petroleum Co., located in the Nicoma Park area.

In Canadian County, the Pure Oil Co. leased 720 acres at the Conho Agency lease sale in Sections 19 and 30-14-9w, 19-13-7w, 26-14-7w and 36-13-6w, for a term of 10 years.

In Washita County leasing has been in progress in Townships 9 and 10 and Ranges 16w and 17w.

Carter County

Wirt Franklin Petroleum Corp.'s No. 1 Burton, NE cor. SW SE Section 31-2s-2w, is a location. Samedan Oil Co.'s No. 2 Hopson, NE cor. SE NE Section 25-1s-3w, is a location. Dapfine Oil Co.'s No. 1 Majors, SE cor. NW SE Section 25-1-3w, is a location. Carter Oil Co.'s No. 3 Spragins, C SW NW SW Section 19-1s-2w, made 77 bbls. from 2,061-2,195 feet.

Creek County

A. W. Swift's No. 1 Bruner, CEL SW SW Section 3-19-9, is a rig. Whitten and Wilcox's No. 3 Harris, CNL SW NE Section 12-17-10, is a location. Howard and Duffield's No. 1 Marshall, SE cor. NE Section 13-17-12, is a rig. Curtis Oil Co.'s No. 1 Fish, C SE SE Section 8-17-10, was drilling at 1,000 feet. Herndan and Buell's No. 1 Ragen, SW cor. NE SE Section 34-16-9, was dry and abandoned at 3,485-3,508 feet. W. H. Elson and others' No. 1 Jackson, NW cor. SE Section 20-15-10, was dry and abandoned at 3,330-42 feet. Sovereign Oil Co. and others' No. 1 Bighead, NE cor. SW NE Section 1-14-9, was dry and abandoned at 3,530-50 feet.

Jefferson County

Fralyn Oil Co.'s No. 7 (twin), NW cor. NE SW SE Section 3-7s-5w, is a rig.

Hughes County

Dixie-Lee Oil Co.'s No. 1 Taylor, C NW Section 32-5-10, is a rig. Dundee Oil Co.'s No. 1 Pickens, NE cor. Section 21-7-8, is a location. Winona Oil Co. and others' No. 1 Harris, SW SE SE Section 18-7-8, is a rig.

Kay County

Harris & Haun's No. 1 Schimp, C W half SW Section 17-29-1, an old well drilling deeper, was drilling at 2,070 feet.

Oklahoma County

Phillips Petroleum Co.'s No. 2 Classen, SW cor. SE NW Section 15-11-3w, is a rig.

Okmulgee County

J. F. Henthorne's No. 8 Rentie, C SW NE Section 18-14-15, is drilling at 1,000 feet. F. D. Misener's No. 6 Colbert, C SE NW Section 14-14-14, was drilling at 1,750 feet.

Okfuskee County

Regal Oil Co.'s No. 1 Simmer, NW cor. NE NE Section 11-10-11, is a rig. McBroyer and Avers' No. 1 Barnet, SW cor. SE NW Section 25-11-11, was completed for 20 bbls. from 2,338-60 feet. Steckell's No. 1 Montray, NW cor. NE NE NE Section 21-11-11, was dry and abandoned at 2,667 feet.

Osage County

The Texas Company's No. 8, NE cor. NW SW Section 25-24-8, was completed for 50 bbls. from 2,142-60 feet.

Pontotoc County

Bray and others' No. 1 Standridge, NE cor. NW SE Section 25-5-4, is a location. H. & M. Drilling Co.'s No. 1 King, C NW SE Section 32-5-8, was drilling at 500 feet.

Pottawatomie County

Hall & Briscoe's No. 1 Brown, SW cor. NW Section 33-7-4, is a location.

Seminole County

Armstrong's No. 1 Diamond, NE cor. SE SW Section 8-6-7, is a rig.

Stephens County

Graham and Gilbert's No. 1 Ferris, SE cor. NW NW Section 26-2-6w, is a rig. McAllester's No. 2 Dare, NE cor. SW SW NW Section 1-2-8w, was drilling at 300 feet.

Tulsa County

Lovett and others' No. 1 Partridge, NE cor. NW SE Section 32-19-11, was completed for 3,000,000 feet of gas from 1,910-14 feet.

Wildcat Operations in Oklahoma

Northern Oklahoma

ALFALFA COUNTY

Company, farm and location— Remarks:

Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w..... O.W.D.D.; T.D. 5,502 ft; C.O.

CADDO COUNTY

Denver P. & R. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w ..... Drlg. 7,300 ft.

COAL COUNTY

Dodd & Burton's No. 1 Grigsby, NW SE NE Sec. 35-1-8.. Drlg. 1,710 ft.

CREEK COUNTY

Sinclair Prairie Oil Co.'s No. 1 Tibe, SW SE NW Sec. 29-14-7 ..... Drlg. Wilcox 4,194-4,227 ft; show heavy oil.

O. O. Owen's No. 1 fee, NW cor. Sec. 33-15-7 ..... Wilcox 3,992-98 ft; wtr.; P.B. to 1,800 ft.

GARFIELD COUNTY

Continental Oil Co.'s No. 1 Thompson, NW SW SW Sec. 7-24-4w ..... Drlg. 5,255 ft.

HUGHES COUNTY

Dixie-Lee Oil Co.'s No. 1 Taylor, C NW Sec. 37-5-10.... Rig.

Redwine et al's No. 1 Ellis, C NW NW Sec. 9-5-11..... Drlg. 1,225 ft.

KAY COUNTY

Blauner et al's No. 1 Maple, NE NW SE Sec. 20-27-4.... Spudding.

KIOWA COUNTY

McWhirter et al's No. 1 Vanderneck, NE NW Sec. 3-7-19w (O.W.D.D.) ..... C.O. 2,035 ft.

LOGAN COUNTY

Shell Pet. Corp.'s No. 1 Faulkner, C SE NW Sec. 11-15-4w Drlg. 310 ft.

MURRAY COUNTY

A. E. Harden's No. 1 Sadler, NE Sec. 19-1-2..... Rig.

NOBLE COUNTY

Shell Pet. Corp. 's No. 1 Farr, C NE NE, Sec. 19-20-2w.. Drlg. 3,545 ft.

Sinclair Prairie's No. 1 Jerome, SW cor. Sec. 15-20-2w.. Drlg. 5,052 ft.

Rollins et al's No. 1 Frank, SE SW Sec. 6-20-2w..... Rig.

OKFUSKEE COUNTY

Natl. Investers' No. 1 Billy, SE NW NW Sec. 29-12-9... Drlg. 1,440 ft.

PAWNEE COUNTY

G. N. Mainess and Westfield Drlg. Co.'s No. 1 Schlieberg, NW SW NW Sec. 27-22-6 ..... S.D. 1,100 ft.

PAYNE COUNTY

Kemp & Nunnelee's No. 1 Crane, SW SE SW Sec. 10-17-6 Rig.

PONTOTOC COUNTY

Hughes et al's No. 1 Norris, CNL NE SE Sec. 28-4-7.... Drlg. 624 ft.

Gilbert's No. 1 Starritt, NW SE Sec. 28-4-6..... Spudding.

Choctaw O. & G. Co.'s No. 1 Thompson, SW NE SW Sec. 1-1-7 ..... Machine.

Blackwell O. & G. Co.'s No. 1 Abbott, NW SW NE Sec. 14-4-6 ..... Sand 1,542-90 ft.; T.D. 1,710 ft.: to P.B. to 1,190 ft; C.O.

W. E. McGraw's No. 1 Mayhue, NE Sec. 19-2-6..... Rig.

Williams' No. 1 Kroth, NE SE Sec. 33-3-4..... Drlg. 700 ft.

Wirrick's No. 1 Lee, SE SW Sec. 29-2-7 ..... Spudding.

POTTAWATOMIE COUNTY

Payne Drlg. Co.'s No. 1 Lovelace, NW SW NW Sec. 27-6-4 Drlg. 1,670 ft.

SEMINOLE COUNTY

Armstrong et al's No. 1 Diamond, NE SE SW Sec. 8-6-7.. Rig.

English et al's No. 1 Harjo, NE SW Sec. 3-8-8..... Fishing 676 ft.

Donnelly et al's No. 1 Shepard, SE NE Sec. 4-8-8..... Sand 1,395-1,405 ft; wtr.; fishing 1,640 ft.

Harris-Hays' No. 1 Harjo, NE SE NW Sec. 11-6-6..... T.D. 2,910 ft; P.B. to 2,791-2,805 ft; 50 bbls. oil.

Stanolind-Amerada's No. 1 Palmer, NW Sec. 36-6-7..... Wilcox 4,040-51 ft; 2,525 bbls.

Southern Oklahoma

ATOKA COUNTY

L. E. Stewart et al's No. 1 Stewart, SE SE Sec. 2-4s-10 .. Drlg. 1,505 ft.

CARTER COUNTY

E. M. Boring's No. 1 Morgan, C NE NW SW Sec. 4-1s-3w. Showing 12,000,000 ft. gas 2,038 ft; C.O.; set 8-in. 1,798 ft.

JEFFERSON COUNTY

Abbott et al's No. 1 Simmons, NW cor. Sec. 14-6s-6 .... Drlg. 425 ft.

Hobbs' No. 1 Barnett, NE SE SW Sec. 32-5-5w..... Spudding.

Wakefield's No. 1 Kelly, NW SE Sec. 1-5-3w..... Drlg. 450 ft.

STEPHENS COUNTY

Doyle Oil Co.'s No. 1 Cunningham, SE NE NW Sec. 4-1-6w ..... Rig.

TILLMAN COUNTY

Emenheser et al's No. 1 Pace, C SW Sec. 3-4s-17w..... Drlg. 2,200 ft.

Gypsy Oil Co.'s No. 1 Pitcher, NW Sec. 26-4s-15w..... Drlg. 2,700 ft.

TWO FILE SUITS ON PATENTS

The Texas Company has filed suit in the Federal District Court in New Orleans, La., asking that the Chalmette Petroleum Co. of Chalmette, St. Bernard Parish, be enjoined from use of an apparatus for making gasoline for which The Texas Company avers it holds title by patent. The petition asked the court to determine the damages resulting from alleged infringement. The Gasoline Products Co., Inc., Newark, N. J., has filed suit against the Champlin Refining Co., alleging infringement of cracking patents. The suit, filed in the U. S. District Court in Santa Fe, N. Mex., is based upon cracking operations conducted by Champlin, a New Mexico corporation, in its refinery in Enid, Okla.

Important Kansas Fields Producing Nearly Their Full Capacity, New Potential Tests Show

By W. A. SPINNEY
Staff Correspondent, Kansas Fields

A big drop in the potentials of wells in the Ritz-Canton-Decker Field and a smaller decline in the Voshell Pool, McPherson County, were reported during the week. Both reports indicate that the two fields are producing near their capacity. Purchasers in need of additional crude supply are expected to increase their nominations in the Hollow Field in Harvey County and in the Mabee Pool in southern McPherson County, as these are the only other flush areas in the State where crude oil is available near pipe lines.

The complete check of the wells in the Ritz-Canton-Decker and Voshell Pools has not been completed. It is estimated that the potential of the wells in the Voshell Field will be around 15,500 bbls. daily compared to the previous potential of 19,583 bbls. from 119 wells.

The area surrounding the extension well north of the main production in the Hollow Pool, in Harvey County, is attractive at this time. Three offset wells are drilling. The discovery well was Carter Oil Co. and Frank Hollow's No. 1, SW cor. SE NW, Section 17-22-3w. It started at 1,600 bbls. per day. Derby Oil Co.'s No. 1 Schmidt, SE cor. SW NW, Section 17-22-3w, was drilling the cement plugs on top of the Hunton lime at 3,434 feet and is expected to be the first offset completed. Continental Oil Co.'s No. 1 Paul, NW cor. NE SW, Section 17-22-3w, was drilling at 2,200 feet. Shell Petroleum Corp.'s No. 1 Schmidt, NE cor. NW SW, Section 17-22-3w, was drilling at 3,100 feet.

When the potential tests are completed in the Ritz-Canton-Decker Field and in the Voshell Field in McPherson County it is expected that State Umpire L. R. Pickrell will permit the operators to produce their wells 100 per cent of capacity.

Big Drop in Potential

The analysis of the potentials of the wells in the Ritz-Canton-Decker Field, in McPherson County, is not complete at this time. Of the 180 wells completed in the field as of March 1, 160 show a decline of approximately 60 per cent compared to the potential taken last November. The potential of the 160 wells was 34,259 bbls. compared to the November potential of 83,288 bbls.

The Viola lime wells in this field show a decline of approximately 40 per cent from the potentials of November, 1932. The potential of April 1, 1933, shows that 96 wells producing from the Viola lime in the Ritz-Canton-Decker Field had a potential of 30,255 bbls. compared to 69,790 bbls. potential as of November, 1932.

The present potential of 62 chat wells in the field was 4,004 bbls. compared to the previous potential of 13,498 bbls. taken November, 1932.

What is believed to be the largest decline in the field is on the Dickey Oil Co.'s lease in the SE Section 35-19-2w, on the southwest edge of the field, where the largest wells were completed. This lease has three wells producing from the chat that had a potential of 2,785 bbls. a day under the November tests. These have fallen off to a potential of 47 bbls. of oil and 3,200 bbls. of water a day. One of the wells on this lease was rated at 14,300 bbls. initial production.

Some of the wells in the field show an increase in the present potential tests compared to the test of last November. The increase is due to acid treatment. The Vernon Oil & Gas Co. and others' two wells on the Drum lease in Section 35-19-2w, show an increased potential from 185 bbls. to 306 bbls. These wells are producing from the chat formation.

Viola lime wells in the Ritz-Canton-Decker Field showing a decline in the present potential compared to the previous one include J. Carey and others' Holt lease in Section 13-19-1w, with two wells, which had a potential of 3,409 bbls. but a present potential of 906 bbls. a day; Lassen and others' Hale lease, in Section 24-19-2w, with two wells shows a decline in potential production from 1,429 bbls. to 235 bbls. a day.

State Umpire L. R. Pickrell completed potential tests in the Voshell Pool, in McPherson County, on April 7, in order that new proration regulations may be issued by the State Corporation Commission. According to the umpire's report of March 1, the field had a total potential of 19,583 bbls. daily. The deep sand wells, of which there are 102, had a potential of 18,287 bbls. and the chat formation wells, of which there are 17, had a potential of 1,296 bbls. daily. The new potentials are not yet available.

Production of Pools

Production from the principal pools in the State for the week ending April 8 was as follows:

Pool—	Prod.
Hollow	5,285
Ritz-Canton	26,715
Voshell	12,310
Sedgwick County	10,090
Mabee (Nikkel)	5,675
Ellsworth County	2,900
Barton County	165
Rice County	2,930
Stafford County	210
Reno County	1,800
	67,080
Others	54,020
Total	121,100

Three New Wells in Breford Pool

Three new wells were completed in the Breford Pool on the Barton and Ellsworth County line, offsets to the discovery well in Section 7-17-10w, in Ellsworth County. Material is being moved in for another well by Slick, Pryor & Lockhart and others in the C SE NE, Section 12-17-11w, in Barton County, a half mile west of production. The completions were: Magnolia Petroleum Co.'s No. 1 Andrea, in Section 7-17-10w, Ellsworth County, swabbing 16 bbls. of oil an hour from the conglomerate at 3,384-91 feet; Slick, Pryor & Lockhart's No. 1 Andrea, in Section 12-17-10w, making around 870 bbls. a day from 3,139 feet; Slick, Pryor & Lockhart and others' No. 1 fee, in Section 12-17-10w, pumping around 175 bbls. a day from the Kansas City lime. Oil from the four wells is being moved out at the rate of 2,000 bbls. a day from two loading racks to the Sunflower refinery at Hutchinson.

The rig is up for a test in Butler County east of Leon. W. H. Lassen, Benedum & Trees and others' No. 1 Tabing, in Section 21-27-6, is the location in a block of leases including the land of H. Reiserer, W. Dilts, E. Glassburner, W. Winn, N. S. Matthews, E. Semisch and others. Another wildcat was announced for Reno County, Roth & Faurot and Washabaugh's No. 1 Yoder, C NW NW, Section 15-24-5w. This test will be interesting as it may indicate the trend of the Abilene Arch.

Carter Oil Co.'s No. 1 Rowley, in Section 30-25-2, a wildcat test in Sedgwick County, was drilling at 2,500 feet. The test is located on a promising structure and it is expected to reach the pay horizon during the week.

Acid Treatment in Mabee Pool

Acid treatment is believed to have improved the Hunton lime production in the Mabee Pool, in McPherson County. Mid-Kansas Oil & Gas Co.'s No. 2 Schmidt, SW cor. NE NE, Section 33-21-3w, was treated and it increased its production 350 per cent. Before treatment the well was making 168 bbls. a day. Immediately after treatment it started making 20 bbls. of oil an hour. The well is located in the north end of the Mabee Pool, and is a north offset to J. E. Mabee, Inc.'s No. 1 Koehn, a 400-bbl. Hunton lime producer.

Shell Petroleum Corp. has made location for No. 1 Nikkel, NW cor. SE SW Section 8-22-3w, in the area between the Hollow Pool and the Mabee Pool, in Harvey County. It is the south offset to the McComb and The Texas Company's No. 1 Dyck, a new 1,200-bbl. well.

Failures in Greenwood

During the week two dry holes were completed in Greenwood County.

Rex and others' No. 1 Boles, SE cor. SW SW Section 10-22-12, found the Bartlesville sand dry from 1,782-87 feet, and after drilling to a total depth of 1,806 feet, it was abandoned.

W. Ellis and others' No. 1 Norton, SW cor. NE SW Section 15-22-12, found water in sand at 1,702-45 feet and it was abandoned.

30,000,000-Foot Gasser

In the Ritz-Canton-Decker Field in McPherson County, Harris and Haun's No. 3 Overman, SE cor. Section 21-19-1w, on the east side of the field, found 30,000,000 feet of gas in the chat formation at 2,940 feet. It is not known whether the well will be drilled to the Viola lime. It offsets a Viola lime well.

J. E. Mabee, Inc., and others' No. 4 Martens, CEL SE NE SE Section 19-22-3w, in the south part of the Mabee Pool, in Harvey County, made 172 bbls. of oil in four hours and is estimated at 1,000 bbls. a day from the Hunton lime at 3,466-84 feet.

Liggett and others' No. 1 Hines, C NW NW Section 16-11-15w, Russell County, was treated with 1,000 gallons of acid at 3,223-39 feet and started making oil at the rate of 7 bbls. an hour.

Barton County

Vickers Petroleum Co.'s No. 1 Kerr, NW cor. SE Section 15-16-12w, was dry and abandoned at 3,401-94 feet.

Butler County

Lassen-Trees' No. 1 Tabing, SW cor. SE NE Section 21-27-6, is a rig.

Ellis County

Phillips Petroleum Co.'s No. 1 Bemis, SW cor. Section 33-11-17w, was dry and abandoned at 3,618 feet.

Elk County

J. Hayes' No. 1 Palmer, NE cor. NW Section 36-31-10, was drilling at 500 feet.

Greenwood County

Empire Oil & Refining Co.'s No. 11 Fromme, NE cor. SE NW Section 14-22-11 (old well drilled deeper), cleaning out at 1,908 feet. Reeser and Chriswell's No. 1 Wright, C SW SW Section 28-25-10, was spudding. Kites and Hubbard's No. 1 Vigle, SW cor. NE NE Section 28-24-12, was dry and abandoned at 1,675 feet.

Harvey County

W. C. McBride, Inc.'s No. 2 Schmidt, NW cor. NE NE Section 30-22-3w, is a rig. Producers & Refiners Corp.'s No. 2 Martens, SE cor. SW SE Section 19-22-3w, is a location. Shell Petroleum Corp.'s No. 1 Mikkel, NW cor. SE SW

(Continued on Page 70)

Wildcat Operations in Kansas

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location—	Remarks:
Noble Drlg. Co.'s No. 1 Grant, SW SW Sec. 4-20-11w	T.D. 3,362 ft; P.B. to 3,325-35 ft. to test.
Rankin et al's No. 1 Sooeg, C SW NE Sec. 24-18-12w	Drlg. 2,440 ft.
Vickers Pet. Co.'s No. 1 Kerr, NW SE Sec. 15-16-12w	Sil. 3,388-95 ft.; abd.

ELK COUNTY

J. Hayes' No. 1 Palmer, NE NW Sec. 36-31-10	Drlg. 500 ft.

ELLSWORTH COUNTY

Rex Etnyre's No. 1 Arnsman, C SW SW Sec. 10-15-7w	Rig.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Smith, SE Sec. 24-8-25w	Drlg. 4,160 ft.

GREENWOOD COUNTY

Reeser & Chriswell's No. 1 Wright, C SW SW Sec. 28-25-10	Spudding.
Reeser & Chriswell's No. 1 Buyer, C SW SW Sec. 28-26-10	Spudding and S.D.
Wright's No. 1 Madren, SW SE SW Sec. 29-22-12	Machine.
Knight et al's No. 1 Moser, NE SW SW Sec. 33-23-12	Machine.

MARION COUNTY

Farrell et al's No. 1 Williamson, C NW SE Sec. 21-19-4	Drlg. 2,913 ft.

McPHERSON COUNTY

Darby Pet. Co.'s No. 1 Bruckey, NE NW NE Sec. 24-19-1w	Drlg. 1,090 ft.
Gaume & Maxwell's No. 1 Goering, NE SW SW Sec. 24-22-2w	Rig.
Investors Mineral Dev. Co.'s No. 1 Kaufman, SE Sec. 35-21-2w	Rig.
Lario O. & G. Co.'s No. 1 Wilke, C SE NE Sec. 34-20-4w	U.R. 3,764 ft.
Roth & Farout's No. 1 Swanson, NE SW NE Sec. 13-19-1w	Rig.
Shawver et al's No. 1 Nichols, NE NW NW Sec. 28-17-1w	Drlg. 3,166 ft.

PRATT COUNTY

Ninnescah O. & G. Co.'s No. 1 Hardesty, SW SE SE Sec. 28-27-11w	Drlg. 3,897 ft; S.O. 3,657-58 ft.

RENO COUNTY

Roth & Farout's No. 1 Yoder, C NW NW Sec. 15-24-5w	C.O. 325 ft.

RICE COUNTY

Langston et al's No. 1 Wells, NE SE Sec. 4-20-9w	Drlg. 1,060 ft.

ROOKS COUNTY

Kruger's No. 1 Rathburn, SE NW SW Sec. 14-9-16w	Rig.

SALINE COUNTY

Dieter, Warren and Lario O. & G. Co.'s No. 1 Fulton, SW NW Sec. 14-16-2w	Drlg. 2,590 ft.

STAFFORD COUNTY

Atlantic Oil Prod. Co.'s No. 1 Gates, NW SE Sec. 27-21-13w	Drlg. 2,340 ft.

SUMNER COUNTY

Deal O. & G. Co.'s No. 1 Tompkins, SW cor. Sec. 24-33-1.	Drlg. 1,110 ft.

WOODSON COUNTY

J. Cooper's No. 1 Qiugley, SW SE SE Sec. 15-25-14	Spudding.

Converse Well, Sabine Parish, Increasing Flow; Fifty Derricks Are Toppled Over by Storm

By D. H. BANCROFT
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Apr. 10. — Formally listed as a completion at 1,895 feet in chalk, Joe Modisette's No. 1 Frost Lumber Industries, NE NE Section 20-9-13, Converse area of Sabine Parish, started flowing 75 bbls. daily through 2-inch tubing but since being put on production has been slowly increasing. He has derrick up for No. 2 on the same lease in the NE cor. NW NW Section 21-9-13, across the "40" from the producer. Evans Brothers' No. 1 Cranford, SE SE Section 20-9-13, due south across the section from the Modisette well, made a 45-bbl. head from 1,574 feet, set 2-inch tubing and made another head half way up the derrick but no gauge has been reported.

There were 10 completions in the territory during the week, 6 of which were producers. D. M. Lide's No. 1 Steinhorst, NE NE Section 35-8-12, Zwolle district of Sabine, the best with 150 bbls. by heads from 2,471 feet. It will be given acid treatment. Of six new locations one was in Mississippi, one in Alabama and one in Miller County, Arkansas.

Considerable damage was done in the fields by a storm that swept North Louisiana and South Arkansas late last week, most of it being done in the Smackover area where 40 or 50 derricks were toppled over, and one or two in other scattered localities. Magnolia Petroleum Co. lost several in the Red River Parish Field also. Simms Oil Co.'s refinery at Smackover was damaged to some extent and two or three empty tanks at the Cross refinery were caved in.

Towery Drilling Co., of Shreveport, has assembled a 4,000-acre block in Township 16, Range 8, Bienville Parish, in the northeast corner of the parish, for a test to go 3,300 feet, for which derrick is up 1,800 feet south of the old Coyle well that attracted considerable attention a few years ago. In DeSoto Parish, Lamo Oil & Gas Corp. has a block of 2,000 acres centering on Section 31-12-13, 2½ miles south of Mansfield for a 3,200-foot test.

Bevil and others, of Haynesville, have pooled 2,000 acres centering on Section 24-23-8, in the east end of the field just north of Haynesville townsite for a test that will be decidedly interesting since it is to go 5,000 feet. It is one of the half dozen or more deep holes—from 5,000 to 8,000 feet—scheduled to be drilled in different parts of the territory during the year.

T. J. O'Hara has blocked 14,000 acres in Desha County, northeastern Arkansas, for a similar 5,000-foot test and has location for No. 1 Martin, NW SE Section 3-8-1e, 45 miles southwest of Helena. Gas shows have been encountered at around 1,600 feet in two or three wells drilled in that general territory during the past few years.

NORTH LOUISIANA

E. B. Williams and others have begun drilling a new wildcat, No. 1 Allen heirs, SW cor. SE SW Section 11-18-11, northeast of Haughton, Bossier Parish. They set 8-inch at 80 feet and are drilling ahead. J. T. Anderson's No. 1 Leonard, SW SW Section 19-19-13, is shut down by high water with the bottom of the hole in the Nacatoch at 1,042 feet. A. W. Phillips' No. 1 Oden, NW NW Section 4-18-13, 6 miles northeast of Shreveport, bailed dry at 1,704 feet and retested at 1,714 feet with the same result and is waiting orders. Towery Drilling Co. has derrick up for No. 1 Lawhon, in the SE cor. NE NE Section 15-16-8, Bienville Parish.

Two of the week's completions and one of the new locations were in Caddo Parish. Louana Oil & Gas Co.'s No. 1 Waskom, SW SW Section 29-19-16, Blanchard gas district, was dry and abandoned at 2,815 feet after two or three drill stem tests failed to produce a show. The Texas Company's No. 20 D. H. Raines, SW SE Section 15-21-15, Pine Island, pumped 15 bbls. after acid treatment in the chalk at 1,700 feet. The new location is Roberts and Wimberly's No. 1 J. S. Noel, NW NE Section 12-20-16, Oil City district.

In DeSoto Parish, Mrs. Ibach's No. 1 Rambin, NE NE Section 32-11-11, that looked as if it might develop into a commercial gas well at 2,964 feet, swabbing a little 48 gravity oil from broken sand and shale at 3,054 feet, is coring sand and chalk at 3,460 feet. E. J. Stanberry's No. 1 Naborton Oil & Gas Co., Section 32-13-11, had a small show of oil in chalk at 1,408 feet. Jack Whitson's No. 1 Sanders, SW SW Section 19-11-13, was junked and abandoned in sandy shale at 2,765 feet after filling up 500 feet with fluid, about 25 per cent oil, from 4 feet of sand at 2,750 feet. He moved 500 feet north and is rigging up on No. 2 Sanders in the same "40." Lamo Oil & Gas Corp. cemented 10-inch at 300 feet and is drilling on No. 1 T. J. Fleming, NW NW Section 31-12-13, 2½ miles south of Mansfield. Evans and Collingsworth's (Decker and others') No. 1 Hickman and Simmons, NW NW Section 40-4-1e, Rapides Parish, 7 miles northeast of Alexandria, claims gas shows at 785-95 feet, 1,025-30 feet and 1,050 feet but not enough to make a well, and is drilling ahead.

United Gas Public Service Co.'s deep test in Claiborne, No. 1 Meadows, NE SE Section 13-21-5, was coring at 4,823 feet. Top of the anhydrite was high, as was the base and no oolitic lime has been found where it should have been. The well is scheduled to go 6,000 feet. Its No. 1 Temple, Section 21-23-7, was coring at 3,894 feet after a drill stem test at 3,850-75 feet, developed nine joints of salt water.

Besides the Modisette completion in Converse, four completions were listed from Sabine Parish, three of them in Zwolle and a wildcat. The latter, G. E. Jordan's No. 1 Dew, SW SE Section 34-8-11, swabbed 35 bbls. from 2,635 feet after acid had failed to help it much. Pelican Natural Gas Co.'s No. 20 Louisiana Long Leaf Lumber Co., SE NE Section 8-7-11, pumped 50 bbls. from 2,716 feet after acid treatment. F. E. Stancil's No. 1 Ponder, NE SE Section 10-7-11, pumped 5 bbls. from 2,593 feet after treatment. The other was D. M. Lide's well. Pugh-Hickman Drilling Co. has derrick up for No. 8 Blackman, NW NW Section 36-8-12. Nos. 5, 6 and 7 are blind locations.

Zwolle Production Co.'s No. 1 Tatum, SW NE Section 25-8-12, flowed for 10 hours at the rate of 750 bbls. from 2,375 feet and then went dead and is being cleaned out. Graham Production Co.'s No. 1 Lites, SE SW Section 28-8-11, Zwolle, is temporarily abandoned as a dry hole at 2,700 feet. Pugh-Hickman Drilling Co. began No. 4 Blackman, NE NW Section 36-8-12, March 27, topped the chalk at 2,235 feet, made a dry drill stem test at 2,235-69 feet and is arranging to test again at 2,500 feet. Service Drilling & Royalties Co.'s No. 2 Smith, NW NE Section 18-7-11, is temporarily abandoned after acid treatment at 2,814 feet failed to produce results. Skidmore and Mize temporarily abandoned No. 1 A. Stoker, a wildcat in the SE NW Section 33-8-10, at 1,600 feet with junk in the hole.

Gibson and Johnson abandoned No. 1 J. J. Willis, SE SE Section 32-3n-9, Vernon Parish, in shale at 3,617 feet after completing their contract with the original owners to drill to contract depth of 3,600 feet and turned it back to them. It may be revived and drilled to 5,000 feet.

ARKANSAS

Jenkins Brothers' No. 1 B. F. Smith, SE SE Section 32-15-26, Miller County, was dry and abandoned in marl at 3,450 feet and locations for Nos. 2, 3 and 4 in the same "40" also were dropped. Molar Oil Co.'s No. 1 A. M. Gibson, NW NW Section 30-18-27, was abandoned when the storm toppled the derrick. Capt. E. Byrd has derrick up for No. 1 Westmoreland, SE NE Section 8-19-27. McDonald & Carroll lost the derrick on No. 1 Robert Adams SE SW Section 2-19-26, Lafayette County, in the same storm and are waiting orders at 3,272 feet. Fitzwater and others' No. 1 Nosser, SE SW Section 29-15-27, Miller County, shut down at 1,960 feet since January 2, has resumed drilling, and is at 2,020 feet. Roy Kniveton is rebuilding wrecked derrick on No. 1 Barker, NW SE Section 31-17-26, and will resume drilling at 3,125 feet. Duluth-Arkansas Oil Co.'s No. 1 Price, NW NE Section 18-16-25, is in sandy shale at 3,180 feet. F. C. Henderson tested four joints of mud on drill stem test of No. 1 J. F. Sample, NW NW Section 1-18-16, Union County, at 2,520 feet.

MISSISSIPPI—ALABAMA

Mississippi Oil & Gas Development Co. abandoned the second of its five tests in the Delta country, No. 1 Dockery, SE SW Section 21-22-4w, Sunflower County, dry in chalky shale at 3,801 feet. At the same time, it made location and was rigging up to drill No. 1 Adair, SE SE Section 36-21-3w, Sunflower County. P. J. McAlpine bailed dry in sandy lime at 2,706 feet on No. 1 Rye, Section 22-15-17, Monroe County, a quarter of a mile from the discovery gas well that led to all the present activity in Mississippi, and is drilling deeper. Bob Dalton and others' No. 1 K. D. Majure, SE SE Section 25-6n-11, Newton County, topped black shale at 2,240 feet, chalk at 2,740 feet and is shut down at 2,750 feet.

Escambia Oil Co. has derrick pattern on location for No. 1 State Line Lumber Co., NW Section 24-1n-10, Escambia County, Alabama.

Marion County, Texas

Dragon Oil Co.'s No. 1 R. W. Player, M. G. Noll Survey of Marion County, Texas, 2 miles west of production in the Trees City area of Caddo Parish, Louisiana, skidded 100 feet south from the original hole which produced a healthy show of green oil only to be junked, set surface pipe at 80 feet and were drilling below 500 feet.

Daily Average Runs

Daily average runs from the field showed a net gain of 335 bbls. over last week, Louisiana's 605-bbl. increase being offset by a decline of 270 bbls. in Arkansas. Daily average runs from the several pools were:

NORTH LOUISIANA

	Bbls.
Caddo, light	5,215
Caddo, heavy	1,750
Cotton Valley	625
DeSoto-Red River	1,830
Elm Grove	350
Haynesville	3,990
Holly	230
Homer	2,700
Pleasant Hill	300
Sarepta-Carterville	795
Urania	1,500
Zwolle	11,455
Total	30,720
Last week	30,125
Increase	605

ARKANSAS

Champagnolle	1,355
El Dorado	2,710
Lisbon	415
Miller County	50
Nevada County	605
Smackover, light	2,555
Smackover, heavy	22,160
Stephens	150
Urbana	375
Total	30,315
Last week	30,585
Decrease	270
Both states	61,035
Last week	60,710
Increase	325

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

North Louisiana

BOSSIER PARISH

Company, well, farm name, section and block—	Remarks:
John L. Anderson, tr.'s No. 1 Leonard, 600 ft. E, 300 ft. N, SW cor. Sec. 19-19-13	S.D. in Nacatoch; T.D. 1,042 ft. account high wtr.
Cryer Oil Co.'s No. 1 fee, 3,400 ft. N, 1,080 ft. E, SW cor. Sec. 26-19-12	Cmtd. 6-in. csg. 852 ft; drilled plug; W.O.
A. W. Phillips, tr.'s No. 1 Oden, 300 ft. W, 150 ft. N, SE cor. NW NW Sec. 4-18-13	Set 6-in. with packer 1,607 ft.; bailed dry 1,714 ft; W.O.

CLAIBORNE PARISH

United Gas Public Service Co.'s No. 1 Meadows, approximately 100 ft. S, center E½ E½ Sec. 13-21-5	D.S. test 4,514 ft; dry; coring lime and shale 4,766 ft.
United Gas Public Service Co.'s No. 1 Temple, 1,340 ft. W, 660 ft. N, SE cor. Sec. 21-23-7	Coring 3,847 ft.

DESOTO PARISH

Bailey Gantz et al's No. 1 Jenkins, NW cor. SE SW Sec. 35-12-12	S.D. for csg.; gas show 870 ft.; T.D. 890 ft.

(Continued on Page 67)

Pool Extensions and Deeper Sand Production in Two States Feature Week on Gulf Coast

By NEIL WILLIAMS
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Apr. 10.—Extensions of production and opening of new sands in a number of scattered fields featured Gulf Coast developments during the week. Another long list of completions was recorded for the Conroe Field, and four new wells brought in at Rabbs Ridge, but in both fields named the completions were more or less routine in proving up inside acreage. At Conroe further decline in drilling activity was reflected with the total number of rigs below the 60 mark as contrasted with a peak of approximately 95 a little over a month ago.

In the Conroe Field interest locally was centered on The Texas Company's successful efforts to kill its No. 14 Rhodes, which blew out April 1 and which ran wild until Thursday, April 6. It was generally assumed that the well would be lost and add another crater to the long list which is being accumulated as a result of the heavily charged shallow sands which have made control of wells within the "crater" area difficult. The Rhodes well blew out unexpectedly between the flow string and the surface pipe while standing cemented on the Conroe pay waiting to be tested. In the blowout the derrick was wrecked. As soon as a new derrick can be provided and a rig moved in, the company can proceed with drilling plug and completing the well, as the gas pressure which came from outside of the flow string, now has been mudded up safely.

Extends Production

Navarro Oil Co. and Standard Oil Co. of Kansas late in the week were bringing in their No. 1 Meyers, located at the extreme northeast edge of the field in the C. A. West Survey, and should make an additional extension of production in that direction. It is a north offset to Humble Oil & Refining Co.'s No. 1 Alensius-Chisholm, completed the previous week flowing initially at the rate of 117 bbls. an hour through a half-inch choke.

With the appearance of water in Malta Oil Co.'s No. 1 Texas Osage (Falvey), located over a mile southwest of production, and completed two weeks ago, Alpha Oil Co. has abandoned the location it had made for a south offset in the northeast corner of the F. R. Henderson Survey on its South Texas Development Co. "D" lease. The test had a derrick and rig up but these have been moved off. Sun Oil Co., however, has made location for an east offset, this being No. 4 Foster, located 466 feet out of the southwest corner of the J. Bricker Survey.

Not Showing Water

In this column of the April 6 issue of The Oil and Gas Journal it was stated that Strake Petroleum, Inc.'s No. 1 Keystone Mills, located on the west edge of the field, had started showing water. This statement was in error. When first completed, last February, this well made some water due to the fact the hole was drilled too deep accidently, but the trouble was corrected by killing the well and plugging back. When brought in the second time, the well made one of the best producers in the field and has produced nothing but pipe line oil since then. As wells located in the highest part of the field have drilled into water and have been corrected by plugging back, the water which showed in the Strake well when it first was completed was not taken as defining the field.

Particular interest at the close of the week was centered on Strake Petroleum, Inc.'s No. 1 Schaeffer, C. B. Stewart Survey, which is located nearly a mile west of production. Although no definite information is available, it is drilling below 5,000 feet and should give some indication shortly of a possible extension of the field.

Sinclair Prairie Pipe Line Co. was busy the past week acquiring right of way through the Conroe Field for the new 12-inch line the company will lay from Colonel Station in Freestone County to the coast. The line, which will provide an additional outlet to the coast for East Texas crude, also will serve the Conroe Field and will make the fifth pipe line outlet for this field. Humble Pipe Line Co., the Texas Pipe Line Co. and the Tide Water Pipe Line Co. already have lines in operation, while Channel Transport & Marketing Co. is ready to start work on its new line.

Iowa Production Extended

Production of the Iowa Field, located on the line of Calcasieu and Jefferson Davis Parishes, was extended substantially both northward and southward the past week by two new wells. Magnolia Petroleum Co.'s No. 3 Waite, approximately 1,800 feet north of production, came in flowing initially at the rate of 800 bbls. of pipe line oil daily through a quarter-inch choke from sand at a total depth of 6,975 feet. It has a working pressure of 1,350 pounds. A half mile south of production, Shell Petroleum Corp. brought in its No. 3 Heyd, which flowed 170 bbls. in the first 18 hours with 2,200,000 feet of gas. It was on an eighteen-sixty-fourth inch choke and registered a pressure of 1,825 pounds on the tubing and 1,575 pounds on the casing. Production is from sand at a total depth of 5,539 feet. It is probable, however, that the well will be deepened to the 6,900-foot horizon, from which all other wells at Iowa are producing. The 5,500-foot sand has been encountered by all the other wells but has been passed up in the development of the lower horizon. Six wells previously have been completed at Iowa, all of which have been fairly closely grouped. There have been no dry holes.

Two other South Louisiana areas offered new production the past week, these being Gueydan, Vermillion Parish, and Darrow, Ascension Parish. However, as this is written the wells due to open the new production have not been completed. At Gueydan, Pure Oil Co.'s No. 2 Mulvey, which not only is an extension of proven acreage but which has discovered a deeper sand than that in which previous wells have been completed, late in the week, although losing the swab in the hole when the swab line broke, was flowing at the rate of 216 bbls. of fluid daily of which 86 bbls. was net oil and the remainder wash water. It has 31 feet of 7-inch screen set in a sand at a total depth of 4,850 feet. Two other wells have been completed at Gueydan, both of which are in a 4,000-foot sand.

At Darrow, Rio Bravo Oil Co.'s No. 2 Community is in a sand at a total depth of 4,827 feet where 81 feet of 7-inch screen was set. It was swabbed and failed to flow but the hole is standing full of fluid, showing very little water, and is being rigged up to pump. Operators expect to make a good pumper. This well is 1,760 feet south and 600 feet west of No. 1 Community, the discovery well and so far only producer. The latter was completed last September in a sand at a total depth of 4,035 feet. It has not been produced since then except at intervals to provide fuel.

Another Producer in Keeran

The fourth producer for the Keeran Field, southeastern Victoria County, lower Gulf Coast, was completed the past week by Gulf Production Co. and Victoria Oil Co. in their No. 3 Keeran Ranch, which came in flowing 580 bbls. of pipe line oil through a five-sixteenths inch choke in the first 24 hours from sand at 5,700-05 feet. The sand is a different one from any of the others which are producing in the district. No two wells are in the same sand. The new producer is 1,320 feet northwest of the discovery well, No. 1 Keeran, which is a wet gasser at 5,191 feet. The second well, No. 2 Keeran, 200 feet west of No. 1, came in flowing 1,000 bbls. daily at 5,851 feet, while Union Oil Co.'s No. 2 Keeran, the third well, made a wet gasser in a sand at 5,494-5,507 feet. Gravity of the oil in the fourth well, just brought in, is 35.4 degrees. Pressure registered 1,450 pounds.

The Texas Company's wild gasser, No. 6 McFaddin, McFaddin district, southwestern Victoria County, killed itself April 7 after blowing for an even month. The well blew out from a depth of 3,047 feet and cratered, defying all efforts to cap it. The derrick, rig, drawworks and engines were lost in the crater.

New Deep Sand Production

Indications of new deep production at Esperson, Liberty County, were given the past week when Cranfill-Reynolds Co.'s No. 10 Moores Bluff was brought in from a sand at 7,072-77 feet and flowed 1,000 bbls. in 24 hours through a five-eighths inch choke. The well quit flowing presumably because of sanding up. It still is gassing and operators are expecting to clean screen and make a good well. So far the deepest commercial production has been from a 4,100-foot horizon. A number of deep sands have been encountered in the several deep tests drilled and in several of them blowouts have been suffered but none has produced. The new Moores Bluff well, located southwest of the field, is in the Yequa, giving the field Miocene, Oligocene and Yequa production.

Unique Oil Co.'s No. 1 Knox-Layton-Nelson, southwest side of Hull, late in the week was flowing by heads at the rate of 200 bbls. daily after its completion in a sand at approximately 5,620 feet. The well is on a half-acre tract and will necessitate offsets by the D. & L. Production Co. and the Eclipse Oil Co.

Cranfill-Reynolds Co.'s No. 1 J. B. Lewis, a much watched wildcat in Austin County, located in the J. C. Hacienda Survey on a block acquired during the active lease play along the Conroe "trend" westward, has been abandoned as dry at 4,514 feet. The well topped the Hockley-ensis at 3,510 feet (minus 3,327 feet).

Completions included four additional producers at Rabbs Ridge, Fort Bend County; Gulf Refining Co.'s No. 4 Wilson & Cockran, Port Barre, St. Landry, flowing 1,400 bbls. daily, 3,328 feet, as an offset to The Texas Company's No. 14 Botney Bay, which recently opened new production at that dome; The Texas Company's No. 21 State-Lake Barre, Terrebonne Parish, 1,765 bbls., 3,830 feet; Crown-Framer Oil Co.'s No. 4 Minnetex, Mykawa, flowing 100 bbls. daily by heads, 4,913 feet; Humble Oil & Refining Co.'s No. 5 Diemar, Raccoon Bend, Austin County, 300 bbls., 3,568 feet; Rio Bravo Oil Co.'s No. 94 Jordit, Saratoga, Hardin County, a shallow pumper.

Gulf Coast Fields and Wildcats

Week Ending April 8

RACCOON BEND—AUSTIN COUNTY

Company, farm and location—	Remarks
Humble O. & R. Co.'s No. 5 Diemar, 713 ft. from NE line, 2,000 ft. from NW line of Wm. Harvey Sur.	Comp. 360 bbls. daily, ¾-in. choke, 3,568 ft.

DAMON MOUND—BRAZORIA COUNTY

Sinclair Prairie Oil Co.'s No. 31-A Bryan, 155 ft. N, 45 deg. E of SW cor. of Blk. 28, Masterson Subd., and 140 ft. S, 45 deg. E, A. Darst Sur.	Salt 3,838-7,533 ft; T.D. 7,586 ft; drill pipe stuck.

MANVEL—BRAZORIA COUNTY

The Texas Co.'s No. 1 Davis, 350 ft. S 42 deg. W and 400 ft. N 48 deg. W out of E cor. of Lot 31, H. N. Little Sur.	Drlg. shale and lime 3,225 ft.
The Texas Co.'s No. 1 Natali, 300 ft. S 42 deg. W and 300 ft. N 48 deg. W out of E cor. of Lot 43, Div. B, Suburban Gardens Subd., H. N. Little Sur.	Drlg. and sand shale 4,735 ft.

BARBERS HILL—CHAMBERS COUNTY

Humble O. & R. Co.'s No. 2 Kirby, Henry Griffith League, 100 ft. W of E line of lease and 300 ft. N of No. 1	Drlg. salt 3,691 ft.
Mills Bennett Prod. Co.'s No. 2-C Gulf fee, Wm. Bloodgood Sur., 175 ft. N of No. 1	Cored sand showing oil 4,506 ft.
Sinclair Prairie Oil Co.'s No. 14 Wilburn, Henry Griffith League, 150 ft. W of No. 12	T.D. 4,186 ft; set 53 joints of 3-in. screen 4,166 ft; swabbing.
Sun Oil Co.'s No. 16 Wilburn, Henry Griffith League, 150 ft. W of No. 14 and 50 ft. N of S line	Drlg. salt 1,646 ft.
The Texas Co.'s No. 3 Lawrence fee, Henry Griffith League, 740 ft. W of E line in center of tract	T.D. in salt 5,378 ft; drlg. sidetracked hole in lime and shale 4,170 ft.
The Texas Co.'s No. 9 Wilburn, Henry Griffith League, 580 ft. E of NW cor. and 50 ft. S of N line	Drlg. salt 3,091 ft.
Texas Gulf Prod. Co.'s No. 1 O. K. Winfree (W.O.), W. D. Smith Pur., 50 ft. from S line, 100 ft. from W line of tract	T.D. 5,512 ft; milling out 4,510 ft.
Yount Lee Oil Co.'s No. 20 Chambers County, Wm. Bloodgood Sur., 150 ft. N of No. 3 and 50 ft. E of W line	Coring sand 5,722 ft.
Yount Lee Oil Co.'s No. 21 Chambers County, Wm. Bloodgood Sur., 175 ft. N of No. 20 and 50 ft. E of W line	Drlg. salt 5,358 ft; to of salt 5,-113 ft.

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Jim Wells County Wildcat Increasing Its Flow; Hidalgo Wildcat Is Attracting Attention

By B. D. STEVENSON
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Apr. 10.—Results were not entirely final in hardly anything in Southwest Texas the past week, except in the abandonment of a few dry holes. Magnolia Petroleum Co.'s No. 2 Seeligson, in southern Jim Wells County, pure wildcat, 25 miles from any production, reported as a well two weeks ago, is now flowing 100 bbls. daily with casing set at 3,247 feet and total depth 3,255 feet. It is believed the flow will increase somewhat after the well has been on production for a time, the idea being that a good deal of water got back in the sand when it was necessary to kill the well to recement the casing. At any rate it is a well and validates a big block of leases.

For some time the popular play in Southwest Texas is the Jackson trend from Conroe through Austin, Colorado, Bee, McMullen Counties and down through the Laredo district. This test of the Magnolia lines up with the Agua Dulce Field in western Nueces and the Refugio Field and also with the activity in Mexico where both the Ohio Oil Co. interests and the Sinclair Prairie interests have been drilling for a year or so and where there have been reported two gas blowouts.

Hidalgo County

About half way between the Magnolia well and the Rio Grande, Carl & Johnston's No. 1 Doughty, in about the middle of Hidalgo County, is pretty well started and below 1,000 feet on a big block that was worked with torsion balance and seismograph and, excepting Scruggs' No. 1 Collins in extreme western San Patricio and John F. Camp's No. 1 King in western Nueces County, the third test in the new King Field, it is the only test along that line and the only pure wildcat. Camp's test is practically proven and the Scruggs' test is between the Sandia and Mathis Fields. Crude Oil Royalty Co. is down 2,100 feet in No. 1 Allen in the Sandia Field, but shut down for a few days.

Saxet Field

In the Saxet Field in Nueces County, three tests are on the 4,800-foot sand. Gibson Oil Co.'s No. 2 Rand Morgan topped the sand at 4,831 feet, which is quite high, late in the week. Gulf Port Oil Co.'s No. 1 Rand Morgan at 4,858 feet and Holliday's No. 1 Smith at 4,880 feet have been working for some days and are not finally completed. Looks like No. 1 Smith will make less than a 100-bbl. well. The other pulled tubing and reset and swabbed again but is not yet complete.

Laredo District

Results were expected to be obtained over the week-end in William B. Stewart's No. 1 Duval County Ranch Co., in Survey 362, in northern Duval, 1 mile northwest of the North Government Wells Pool. At 2,310 feet and in the Government Wells sand it set casing more than a week ago at 2,296 feet and started to drill in late last week. As soon as it is completed No. 2 in the same survey about three-quarters of a mile southwest, which stopped in the Cole sand topped at 1,557 feet, will drill in. It showed a lot of gas.

Humble Oil & Refining Co.'s No. 4 Hahl, in Survey No. 360, came in last week flowing 91 bbls. in two hours from sand at 2,278-98 feet, one of the best wells in the field. No. 3, a quarter of a mile north of it, was completed for a somewhat smaller well a week or two before and it is the farthest test north in the field. Humble owns the acreage for another half mile north and as this is the only direction in which the bounds of the field do not seem to have been set, further extensions of the field are in the hands of the Humble, and there is very little activity left in the field.

Sarnosa Pool

Also there is only a little left in the Sarnosa Pool. Magnolia Petroleum Co.'s No. 2 M. Ruiz, an inside location and northwest offset to its No. 1 D. Ruiz, is not showing up so good. No. 1 D. Ruiz, in the extreme west corner of Survey 127, came in a big well good for 1,000 bbls. daily. No. 2 M. Ruiz got the sand about right and is not completed but looks like it might be a small affair. Sun Oil Co. is offsetting it on the southwest with No. 3 Cano, not yet in the sand.

Smith & Hunter's No. 1 Olivarez, 7 miles east of the North Government Pool, after standing at 2,622 feet resumed drilling and is below 3,190 feet. The discovery well, No. 1 Pena, went dead in sand at 1,910 feet.

Shasta is still working with No. 1-B Peters (carried by some as No. 2), and has started drilling No. 3 Peters, south of the other two.

Laurel Pool

At the south end of the Laurel Pool in Webb County after getting a big well recently they are getting little ones. Wise & Jackson, the farthest south test in the field, looks like only about 30 bbls. However, they are still working with it. South Texas Oil Co.'s No. 14 Laurel, on the north edge of this south or Dyck extension, also starts off small. Neither of the tests flow, as do the others in the field. South Texas Oil Co. jumped from its numbering of the tests from 12 to 14, refusing to have No. 13 but it seems to have been No. 13 jink's luck just the same.

McMullen County

North of the Government Wells district up through McMullen County, interest was aroused the past week when Jacqua & Crow got the Mirando sand at 2,870-80 feet but dropped again when they tested only a little oil and some mud. The first 5 feet was drilled and the last 5 feet cored but only the lower 2 feet recovered and it showed some oil and inspired hope.

Shumway, on the Shiner ranch in central McMullen, abandoned No. 2 at 2,300 feet without getting anything and this leaves McMullen with only S.R.C.'s No. 1 LaChusa drilling at 2,886 feet and Whisenant & Trenchard moving in on the Martin ranch, several miles west.

In the northern part of the county, for some time there has been an active play following the development of the Jacob Pool by Jacob, Buzzini & Pickett in northeastern McMullen, at less than 1,000 feet. The play follows along the line between Atascosa and Live Oak and Jacob, Buzzini & Pickett's No. 1 Schroeder now down several hundred feet is in the extreme southeastern corner of Atascosa near the Karnes County line. Several tests have been drilled and others are drilling now in the territory between their No. 1 Schroeder and the Jacob Pool. They are all looking for shallow production at around 1,000 feet.

Balcones Fault

Teas & Gant's No. 1 Mikulec at 7,103 feet was thought to be in Georgetown. Located in southeastern Bastrop its contract depth was Edwards lime or 7,000 fet. It is still making hole. Paton Brothers' No. 1-B Turner, the other Edwards lime test at the northeast end of the Balcones fault zone that attracted considerable attention, has had mainly bad luck and is drilling at 1,110 feet in a sidetracked hole.

At the extreme southwestern end of the district in Zavala County, the Zavala Oil & Gas Co.'s (Adair & Daniels) No. 1 Gates was down 3,920 feet at the close of last week and making hole, presumably in the Taylor marl.

Guadalupe County

There are to be three new Edwards lime tests, both in Guadalupe County. Buckley Brothers had machinery on the ground late last week for No. 1 M. T. Howell in the Darst Survey, north of the River and about 3 miles east of the lower end of the Darst Creek Pool. Also Magnolia is to drill No. 1 Williams in the Green DeWitt Survey west of the lower end of the Darst Creek Pool. The third test is by the Luling Oil & Gas Co. on the Schuneman farm in the B. Fuqua Survey.

Wildcat Operations in Southwest Texas

Week Ending April 8

Company, farm and location—	Remarks
ATASCOSA COUNTY	
A. Blume's No. 1 Shaw, 690 ft. from N line, 1,780 ft. from E line of 100-ac. tract in W. Farquhar Sur. No. 275	T.D. 450 ft; drlg.
Jacob, Buzzini & Pickett's No. 1 Schroeder, 160 ft. from N and W lines of 159-ac. tract in Frederick Anthony Sur.	T.D. 600 ft; drlg.
BASTROP COUNTY	
Champion's No. 1 Rivers, center W½ of 800-ac. tract in Osborne Sur.	T.D. 1,980 ft; drlg.
J. E. Emanuel's No. 1 H. Klemm, 817 ft. from W line, 300 ft. from S line of tract in R. S. Teal Sur.	T.D 263 ft.; resumed drlg.
Marts and Beavens' No. 1 Reyes, 750 ft. from W line, 150 ft. from S line of 48-ac. tract in Addison Lytton League	T.D. 1,150 ft; drlg.
C. C. Shumway's No. 1 J. W. Buckner, 2,250 ft. from NW line, 1,150 ft. from NE line of farm in Wm. M. Jenkins Sur.	T.D. 1,200 ft; drlg.
Teas and Gant's No. 1 Mikulec, 330 ft. to NW and SW lines of tract in Wm. Barton Sur.	T.D. 7,171 ft; drlg.
BEE COUNTY	
Humble Oil & Refining Co.'s No. 1 Imogene Hall, 1,815 ft. from SW line, 330 ft. from SE line of tract in Thomas J. Butler Sur.	T.D. 2,500 ft; drlg.
BEXAR COUNTY	
R. S. Boling's No. 1 J. J. Appelt, 150 ft. from N and W lines of tract in M. Uriegas Sur.	T.D. 825 ft; drlg.
E. R. Byrd's No. 1 W. H. Russell, 750 varas from NE line, 54 varas from NW line of Fernandez Rodriguez Sur.	T.D. 1,100 ft; reaming.
Motes-Campbell's No. 1 Pruitt, 550 ft. NE of Trussell's No. 1 Pruitt, 54 varas from E line of tract in Samuel McCollough Sur.	T.D. 1,065 ft; changing to rotary.
Ethridge et al's No. 1 Bilharts, 150 ft. to N and E lines of SE 100 acres of Bilharts 360-ac. tract in F. Rolen Sur.	To be drilled by Moter-Campbell.
O. L. Ray's No. 1 Thos. Dillon, 2,500 feet from NW line, 1,750 ft. from most southerly SW line of de Luna grant in southern part of county	T.D. 580 ft; drlg.
J. Morgan Russell's No. 1 Brotze, 790 ft. from W line, 300 ft. from N line of 50-ac. tract in Cordenas Sur.	T.D. 285 ft; abd.
J. Morgan Russell's No. 2 Brotze, 200 ft. W of No. 1, in Cordenas Sur.	T.D. 340 ft; drlg.
Earl S. Post's No. 1 Bilharts, 1,265 ft. from W line, 2,169 ft. from S line of 325-ac. tract in F. Rolen Sur. No. 48	T.D. 502 ft; drlg.
Sun Rise Oil Co.'s No. 1 R. J. Uecker, 150 ft. from N line, 450 ft. from W line J. M. Perez Sur.	T.D. 760 ft; testing.
Swearingen Oil Co.'s No. 1 W. H. Russell	T.D. 750 ft; drlg.
Tipton's No. 1 Gembler, 514 ft. from W line, 616 ft. from N line of 120-ac. tract in M. Gotari Sur.	Spudded in.
Milo Trussell's No. 1 K. K. Harring, in J. Cantu Sur.	T.D. 1,011 ft; tested gas; drlg. deeper.
BLANCO COUNTY	
H. T. McGee's No. 1 Glasscock, center Sur. 167	T.D. 1,425 ft; drlg.
CALDWELL COUNTY	
Fred Adams of Lockhart No. 1 Robertson, 450 ft. from N and W lines of Robertson 100-ac. tract in John Neill Sur.	T.D 2,322 ft.; csg. collapsed.
DUVAL COUNTY	
Ed Leach et al's No. 1 C. J. Bain, 330 ft. to S line, 330 ft. to E line of NW SW of Sur. 264	T.D. 1,323 ft; coring.
Newton et al's No. 1 Welder-Wood, 5,550 ft. from W line, 4,590 ft. from N line of Sur. 102	T.D. 2,485 ft; coring.
C. F. Scott's No. 1 J. W. Kidd, 990 ft. from N and E lines of SE of Sur. No. 58	T.D. 2,402 ft; abd.
Smith & Hunter's No. 1 Olivarez, 1,640 ft. from N line, 940 ft. from W line of Sur. No. 89	T.D. 3,190 ft; drlg.
Wm. B. Stewart's No. 1 Duval County Ranch Co., 990 ft. to S and E lines of NE of Sur. 362	T.D. 2,310 ft; drlg. in.
Wm. B. Stewart's No. 2 Duval County Ranch Co., 330 ft. from N and W lines of N½ SW of Sur. 362	T.D. 1,576 ft; set csg.
Shasta Oil Co.'s No. 1-B Peters, 990 ft. from W line, 330 ft. from N line of NW SW Sur. No. 176	T.D. 2,707 ft; P.B.
Whisenant & Trenchard's No. 1 Duval County Land Co., 1,750 ft. from N line, 1,100 ft. from E line of Sur. No. 76	Spudded in.
FRIO COUNTY	
James E. Greenlee's No. 1 W. W. Burns, 612 vrs. to N line, 900 vrs. to W line of Antone Hutzler Sur.	T.D. 2,330 ft.; in shale; waiting for csg.

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Situation in California Now Reported Improved; Crude Advance Expected Within 60 Days

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Apr. 8.—Unless something unforeseen develops conditions on the Pacific Coast should register a material improvement within the next 30 days. The marketing situation, reflecting a readjustment in refined oil prices, is in a better fundamental condition, indicating a possible readjustment in crude oil prices within the next 60 days. Unfortunately, crude oil producers failed to take advantage of two splendid opportunities to strengthen the price structure on the Pacific Coast since the first of the current year, and have consequently delayed the restoration of crude prices. Marketers are a little more sanguine over the outlook as there has been an improvement in gasoline sales during the first three months of the year. Total sales are somewhat below comparable figures for last year, but the disparity has been lessened each month. Those in close touch with the situation are hoping operators will keep production to a minimum as the outlook appears exceptionally promising, provided production and refining activities are curtailed to the maximum.

Potential Increased

California's potential daily production was increased 1,400 bbls. per day by Umpire Pemberton on April 1. No change was made in the State's allowable quota, which remained at 440,000 bbls. per day, although a few minor adjustments were made in the allowable of several fields. Kettleman Hills, due to the completion of several wells early in March, is credited with a potential daily production of 280,000 bbls. and an allowable daily production of 55,000 bbls. The potential of the Kettleman North Dome Field was increased 5,000 bbls. per day on April 1. The potential daily production of the North Belridge Field was stepped up 415 bbls., to 28,915 bbls. per day. The potential daily production of the Mount Poso Field was increased 1,565 bbls.; Elwood, 1,480 bbls., and Ventura Avenue, 1,525 bbls. The potential of most fields throughout the State was uniformly lower, although several districts reflected severe cuts in their established allowable. The potential of the Long Beach Field was reduced 2,340 bbls. per day, from 90,985 bbls. to 88,645 bbls. per day. In addition, the potential of Elk Hills was slashed 1,400 bbls. per day; Fruitvale, 380 bbls.; Domingues, 760 bbls.; Huntington Beach, 390 bbls.; Inglewood, 250 bbls.; Playa Del Rey, 650 bbls.; Rosecrans, 185 bbls.; Santa Fe Springs, 875 bbls., and West Coyote, 235 bbls. per day. The potential daily production of Los Angeles Basin fields was reduced 6,050 bbls., but this decline was offset by an increase in the potential daily production of San Joaquin Valley fields of 4,700 bbls. and a gain of 2,750 bbls. per day in the potential production of fields located in the coastal area.

Retard Operations

Major companies and most of the larger progressive independent operators have retarded operations in an effort to alleviate conditions and thus permit producers and refiners to use a little black ink this year. The most important agreement effected was the plan evolved by operators in the North Belridge Field of Kern County to permit a general suspension of drilling activities for the balance of the year. Under the terms of this gentlemen's agreement, no wells will be drilled into the Eocene formation in the North Belridge Field until next year. This agreement does not absolutely preclude development of the Temblor formation but rather discourages such development by guaranteeing the maintenance of existing allowable. The Continental Oil Co., in conformity with lease requirements, is rigging up rotary drilling equipment in No. 4 Result, in the North Belridge Field of Kern County, and spud is expected within 15 days. This well, together with the Belridge Oil Co.'s No. 63-27, will be completed in the Temblor formation at approximately 5,500 feet.

No. 1 Bloemer of the Ohio, the only well producing from the Eocene, is flowing 238 bbls. of exceptionally clean 34.7 gravity oil and 610,000 feet of gas per day from 8,525 feet. This well shows an unusually low gas oil ratio and has an exceptionally high gas pressure, 750 pounds on the tubing and 2,400 pounds on the casing. Belridge Oil Co.'s deep zone discovery, No. 64-27, was shut in on completion last year and will remain off production indefinitely as a conservation measure. This well, finished at 8,062 feet, showed an unusually high gas oil ratio, indicating the presence of a gas cap at the apex of the structure.

Kettleman Hills

North Kettleman Oil & Gas Co. eclipsed California's deep drilling record late this week and will probably exceed the world's record of 10,585 feet within the next several weeks. Due to an exceedingly hard formation, only a limited amount of footage was recorded during the past 10 days, but the bit might pass out of this hard handy lime and begin making normal footage again any time. For several days the crew on this well spent most of its time coming out and going back into the hole after replacing the bit. For two consecutive days not more than 2 feet of additional hole was recorded as the bits were literally chewed up. Several new wells are expected to be completed in the Kettleman North Dome Field before the close of April and this group will be followed into production by three more in May. Completion of these wells will step up the North Dome's potential production to well over 300,000 bbls. per day.

Ventura Avenue

Associated Oil Co. finished an exceptionally good well in the Ventura Avenue Field early in the week when No. 130 Lloyd was brought in flowing 3,302 bbls. of 23.9 gravity oil and 2,197,000 feet of natural gas per day. This well was bottomed at 7,900 feet and finished with a 6⅝-inch perforated liner landed on bottom and an 8⅝-inch flow string with a packer at 7,194 feet. Associated is working on three other uncompleted drilling projects and is making preparations to start two more holes. General Petroleum is rotating in No. 15-A Barnard at 7,050 feet but this well, scheduled for completion in the deep zone, still has a long way to go. On the Notten lease, General Petroleum is cleaning out No. 9 preparatory to drilling at 5,970 feet.

Bankline Oil Co. is extending its pier on tideland permit No. 89 in the Elwood Field of Santa Barbara County to facilitate the drilling of No. 10. This will be the first project to be started in the Elwood Field for several months. In the Coal Oil Point area, about 4 miles east of Elwood, Bolsa Chica Oil Co. is drilling in No. 2 on tideland permit No. 191 just below 1,975 feet. This well is 400 feet north of the company's first test, which was bottomed in the Sespe at 5,510 feet and subsequently plugged back to the Vaqueros at 4,089 feet in an unsuccessful attempt to develop commercial production. Two new wells are expected to be finished in the Santa Barbara Mesa Field within a few days. In the Purisima district of Santa Barbara County, where Fairview Oil Co. has started drilling in a test, K. L. Listle and the Meganos Oil Co. are each planning to start a new hole.

In the San Miguelito Field of Santa Barbara County, Honolulu Consolidated has recovered from the fishing job which has been holding up No 1 Valenzuela for several weeks and is again making hole. Continental Oil Co. is making good footage in No. 2 Grubb as this well, about midway between No. 1 Valenzuela of the Honolulu and No. 1 Grubb of the Continental, has already passed the 2,500-foot level. No. 1 Grubb is flowing 1,015 bbls. per day from 7,152 feet. Chanslor-Canfield Midway Oil Co.'s No. 3-A Hobson is standing cemented at 914 feet, at which depth a string of 20-inch casing was landed. In the Rincon Field of Santa Barbara County, Indian Petroleum Co. is drilling in No. 1 on tideland permit No. 82 at 3,127 feet but will probably not be in a position to make a production test for another several weeks. Woodrow Oil Co. passed the 6,800-foot level in No. 1 Lomas a few days ago but this well, inside the shore line in the Rincon Field, has not yet encountered a sufficient thickness of oil sand to result in commercial production.

Mountain View

Mohawk Petroleum Co. should pick up the top of the pay in No. 1 Hood, in the Mountain View, or Weed Patch, area of Kern County, within 15 days, if the potentially productive zone found by the Shell a few years ago extends beneath this property. Shell's No. 1 Porter Day, the pioneer well to be drilled in the Mountain Field, flowed for several hours at the rate of 2,500 bbls. per day during the course of work back in 1930. This well was not officially completed in the upper zone, however, as the Shell resumed drilling operations to determine the thickness of the upper zone and ascertain the possibility of a second productive horizon. The company got some rather favorable showings in a second zone in No. 1 Porter Day, but there was not a sufficient accumulation for commercial production. Following the failure to get production in the lower zone, Shell plugged back No. 1 Porter Day to the upper horizon but was unable to complete it as a commercial producer. The showings founds in both of the zones cored in No. 1 Porter Day indicate the existence of commercial production in the immediate vicinity, although the exact location has not yet been determined. It is probable No. 1 Hood of the Mohawk in Section 30-30-29 and Dana Hogan's No. 1 Wharton in Section 32-30-29 may reveal the location of commercial production. Southeast of the Edison district in southern Kern County, the A. T. Jergins Trust has just passed the 2,000-foot level in No. 1 Sissen, a wildcat in Section 20-30-30.

Mount Poso

It begins to look like the Mount Poso Field of Kern County will experience a little revival of drilling in the next several months. Shell focused the attention of operators on this field a few months ago by completing No. 6 Security and No. 3 Glide, doing approximately 900 bbls. per day each. The significance of these wells lies in the fact that Shell opened up a second thickness of the Vedder zone and by taking in more productive formation greatly increased the initial daily production. There is a sandy interval between the first and second Vedder zone in the Mount Poso Field, but this sand did not carry any water and the company was able to produce from the entire thickness.

Considerable interest attaches to the drilling of a new well in the Mount Poso

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	March 25		March 18			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	78,085	.....
Fuel oil	72,470	10,353	.....	.....	379,473	.....
Diesel and gas oil	.....	.....	154,232	22,033	926,394	46,235
Gasoline	147,904	21,129	17,677	2,525	1,512,402	1,571,303
Kerosene	.....	.....	.....	.....	411,076	.....
Foreign exports—						
Crude oil	212,705	30,386	193,212	28,316	1,630,613	2,174,279
Fuel oil	161,350	23,050	100,249	14,321	1,595,949	2,382,598
Diesel and gas oil	9,949	1,421	158,740	22,677	793,063	566,952
Gasoline	12,850	1,836	70,200	10,029	1,200,375	2,287,771
Kerosene	.....	.....	.....	.....	485,674	716,539
Naphtha distillates	.....	.....	.....	.....	.....	41,175
Coastwise-domestic—						
Crude oil	300,313	42,902	349,766	49,967	3,099,276	2,885,984
Fuel oil	131,267	18,752	250,590	35,799	2,718,179	3,792,208
Diesel and gas oil	5,123	1,205	30,245	4,321	407,166	437,409
Gasoline	89,714	13,816	452,708	64,672	2,758,558	3,182,959
Kerosene	9,373	1,339	17,625	2,518	56,157	38,304
Naphtha distillates	.....	.....	.....	.....	27,651	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	250,531	70,995
Gasoline	.....	.....	.....	.....	239,016	146,441
Kerosene	.....	.....	.....	.....	211,855	.....
Lubricants	.....	.....	.....	.....	8,250	7,849
Foreign exports—						
Crude oil	.....	.....	.....	.....	320,286	413,965
Fuel oil	.....	.....	.....	.....	190,939	442,082
Diesel and gas oil	.....	.....	.....	.....	300,145	253,931
Gasoline	.....	.....	87,477	12,497	1,153,413	706,884
Kerosene	.....	.....	.....	.....	167,050	358,284
Lubricants	.....	.....	.....	.....	13,072	20,884
Coastwise-domestic—						
Fuel oil	71,268	10,173	.....	.....	785,253	591,400
Diesel and gas oil	.....	.....	.....	.....	142,850	176,747
Gasoline	75,689	11,151	59,128	8,446	890,606	718,508
Kerosene	.....	.....	7,279	1,040	43,490	10,857

Field by Ed Richter because this operator has deviated from the usual policy of drilling wells with rotary equipment and will attempt to develop commercial production by cable tool drilling. The outcome will be watched with interest because cable tool drilling may prove quite adaptable fo rwork in the Mount Poso Field, both because of the shallow depth at which production is developed and the compactness of the formation. General Petroleum is rigging up rotary equipment in No. 10 Heisen preparatory to a resumption of drilling at 1,529 feet. This well, finished as a commercial producer several months ago, will be deepened to include the second Vedder zone discovered by Shell Oil Co. several months ago. No. 10 Heisen is close to both No. 3 Glide and No. 6 Security of the Shell and should be successfully completed. J. B. Mitchell has staked location for a new well in the Round Mountain Field of Kern County, and while rig material has not yet been placed on ground it is believed early work is contemplated.

Fruitvale

Three new wells are being started in the Fruitvale Field of Kern County, but this work is not expected to cause any uneasiness from a production standpoint as peak production was reached in this field last year and the district is on the down grade. Milham Exploration Co. spudded in a new well in the Buttonwillow gas field of Kern County late in March and will probably list it for completion within 10 days, as the 8⅝-inch water string has just been landed and cemented at 2,470 feet. General Petroleum, after grading a road to the site of a test on the Lovitt lease in the McKittrick Field of Kern County, has suspended operations. In the Midway-Sunset Field, Honolulu Consolidated has landed and cemented a string of 10-inch casing in No. 44, a recent spud in Section 8-32-24, and since the bit has picked up the top of the pay an early completion is anticipated. Union Oil Co. chalked up a new producer in Section 22-32-23 when No. 1 Keene was finished flowing at the rate of 150 bbls. per day from 1,505 feet. Standard Oil Co. has plugged back No. 1 Mascot, a deep test in the Midway-Sunset Field, from 9,762 feet to 6,380 feet, and will make a final attempt to develop commercial production before abandoning the hole.

Los Angeles Basin

Drilling operations in Los Angeles Basin fields have not shown any great change during the past few weeks and, while development work for the State as a whole is expected to show a consistent increase during the next several months, drilling in Los Angeles Basin will probably remain at its present level. In the Dominguez Field, where drilling operations have been reduced to a minimum, there are only three strings in operation. In the West Coyote Field, Standard is making preparations to complete No. 52 Emery at 5,950 feet and will probably spud in No. 113 Murphy as soon as the crew is available from No. 52 Emery. Universal Consolidated is drilling through the first zone in No. 1 Cruz, a deep test in the extreme eastern end of the structure, but no attempt will be made to develop production in the upper horizon. No. 1 Cruz was started a month or two ago for a deep test with the Miocene as its objective. A. M. Kupfer is making normal footage in a deep test he is drilling on the Sentous property in the Inglewood Field of Los Angeles Basin, but nothing justifying a production test has been found down to the bottom of the hole at 5,285 feet. This well is just outside the proven limits of the Inglewood Field but deeper drilling may change the outlook. Two additional holes are getting under way in the Seventeenth Street town lot section of the Huntington Beach Field but interest in this area appears to be waning, so the town lot area will not become as important a factor as originally believed.

During 1932 a total of 31 old producing wells were abandoned in the Los Angeles City Field to make way for civic improvements. Most of these old wells were abandoned by the C. C. Harris Oil Co. It so happened that the acreage on which these wells were located was condemned by the city of Los Angeles to extend Figueroa Street with Elysian Park. The city compensated the C. C. Harris Oil Co. to the extent of $40,000 and assessed the company $12,000 for the construction of the street. No drilling has been done in the Los Angeles City Field for over 20 years and most of the wells abandoned were drilled 40 years ago. The oil produced was of heavy gravity, averaging approximately 12 degrees A.P.I., which in recent years has been a drug on the market. Many of these old wells are still averaging about 1 bbl. per day, which hardly justifies operation.

Method of Eliminating Gas Troubles on the Gulf Coast

(Continued from Page 28)

sufficient data are available to show that gas troubles could be further reduced by more intensive control of the above weights.

Other Advantages of Control

So far, the discussion in this paper has been restricted to rotary fluid control from the standpoint of gas pressures. This, of course, is of primary importance to the satisfactory completion of the well, but there are still other advantages to be derived from controlling drilling fluids to the above-mentioned characteristics. The most important of these are increased drilling efficiency resulting in reduced drilling time, better settling of sand and cuttings, thinner mud sheath on the wall of the hole, and reduced drilling costs.

The foregoing discussion has been principally concerned with the normal drilling operations in areas where the prevention of blowouts and the increase of drilling efficiency were of greatest importance from the standpoint of drilling fluids. However, there are additional drilling problems which, due to their less frequent occurrence and particular nature, may be considered as special problems but are equally as important to the completion of the particular well as those already described. Among the most important of these are "heaving shale," salt water flow and lost circulation in cavernous areas.

Experience has repeatedly indicated that a drilling fluid for drilling heaving shales should have as little actual free water as possible. On this basis, a trial was recently made on a mud made entirely from bentonitic material and weighting material. This was made highly alkaline by caustic soda and thinned to a viscosity of about 30 centipoise with sodium tannate solutions. This mud was made on the theory that the hydrating action of the bentonitic material would absorb most of the free water, and that water which was not absorbed was made alkaline to minimize its leaching action. The weighting material was added only to increase the hydrostatic head sufficiently to counteract a slight salt water flow. This mud was very carefully controlled as to alkalinity, weight and viscosity, and is believed to have been given a fair trial.

Definitely Retarded Heaves

This type mud very definitely retarded the heaves and reduced their intensity. From the indicated merits of this trial, it is believed that it would be effective for minor causes.

With the failure of all of the above efforts to eliminate the detrimental leaching action of water in drilling fluids for drilling heaving shales, attention has been turned to the use of an oil emulsion as a drilling fluid. If the present theory is correct, i.e., that the action of water on these unstable shales is causing them to heave, then the use of oil should definitely eliminate the heaving.

To make this drilling fluid which had to be weighted to counteract salt water flow, a heavy viscous still bottom with a gravity of about 10 degrees A.P.I. and 30 Furol viscosity was chosen. To this oil was added enough Opalite to increase the weight to about 10.4 pounds per gallon. About 15 per cent water was then emulsified into the oil to increase its viscosity and retard the settling of Opalite. The resulting mud weighs about 10 pounds per gallon with a viscosity sufficiently high to carry cuttings from the hole. The oil suspended the Opalite remarkably well, and no trouble was experienced with the emulsion breaking, causing the mud to carry free water. Shale cuttings were removed from the emulsion by the use of a vibrating screen.

Vibrating Screens

The use of vibrating screens for conditioning drilling fluid is gaining favor, especially in wildcat operations where drilling conditions are unknown. The vibrating screen aids in drilling mud control by:

1. Removal of sand and shale cuttings, and
2. Conditioning the mud from a mechanical standpoint.

The removal of sand from a drilling fluid by the use of a vibrating screen affords a considerable saving in those pump parts which are subjected to abrasion. The per cent of sand removed in this manner is, of course, dependent on the mesh screen used. On most vibrating screen installations, a 24-mesh screen cloth is used, which removes the coarser sand. Observations show this size sand to be from 15 to 25 per cent of the average sand content of the mud. The sand which is finer than 24-mesh (remaining in the mud) does not seem to cause much pump trouble.

The mud hydrometer for weighing mud on drilling wells is gaining favor, because of the inaccuracies of the old scales and bucket method. General experience has shown that scales and bucket weigh from 0.5 pound to 1.5 pounds per gallon too high. The operation of this instrument is simple and accurate.

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Palm Ridge Oil Co., No. 1 Palms, Los Angeles Co.	2- 2-15	4,312	suspended
Pan Tex Oil Co., No. 1 Lawndale, Los Angeles Co.	20- 3-14	5,915	50 B/D
Baldwin Oil Co., No. 9 Inglewood, Los Angeles Co.	7- 2-14	5,863	suspended
Kupfer, A. M., No. 1 Inglewood, Los Angeles Co.	17- 2-14	5,300	br. sh. drilling
Pacific Gulf, No. 1 Athens, Los Angeles Co.	19- 2-13	6,094	suspended
Pacific Oil Inv. Co., No. 1 Wilmington, Los Angeles Co.	28- 4-13	3,717	suspended
Wilmington Oil Co., No. 1 Wilmington, Los Angeles Co.	28- 4-13	3,390	cemented
Jones, W. L., No. 1 Lyndwood, Los Angeles Co.	31- 2-12	4,765	cleaning out
Community Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	5,064	milling
Universal Consd., No. 1 Montebello, Los Angeles Co.	8- 2-11	3,602	sd. sh. drilling
Willetts Pet., No. 1 Saugus, Los Angeles Co.	35- 5-16	1,904	cleaning out
Smith, J. A., No. 1 Saugus, Los Angeles Co.	32- 5-17	3,515	suspended
Alpha Oil Co., No. 1 Calabasas, Los Angeles Co.	22- 1-18	764	repair rig
Hudson Pet., No. 1 Newhall, Los Angeles Co.	1- 3-16	1,300	sd. sh. drilling
Garliepp, F. J., No. 1 Newhall, Los Angeles Co.	14- 3-16	1,132	abandoning
Ball, W. T., No. 1 Newhall, Los Angeles Co.	34- 3-16	3,582	suspended
Big Four Oil Co., No. 1 Newhall, Los Angeles Co.	32- 4-16	2,230	suspended
Marble, Willard, No. 1 Van Nuys, Los Angeles Co.	6- 2-16	2,000	cleaning out
Nuoil Co., No. 1 Newport, Orange Co.	29- 6-10	3,901	fishing
Mineral Exploration, No. 1 Capistrano, Orange Co.	8- 8-7	4,302	suspended
Placentia Dev. Co., No. 1 Placentia, Orange Co.	31- 3-9	rig	rigging up
Spindletop Oil Co., No. 1 Salton Sea, Riverside Co.	25- 7-10	3,590	suspended
Keeley, E. J., No. 1 Corona, Riverside Co.	21- 4-8	697	sd. sh. drilling
Duncan, N. L., No. 1 Sagebrush, Riverside Co.	8- 4-8	1,157	suspended
Great American Pet., No. 1 Chino, San Bernardino Co.	18- 2-8	1,727	hd. sd. drilling
Mason Oil Co., No. 1 Salton Sea, Imperial Co.	1-17-15	680	suspended
Weeds, D. H., No. 1 Salton Sea, Imperial Co.	7-11-16	774	suspended

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Fairview Oil Co., No. 1-A Purisima, Santa Barbara Co.	18- 7-34	1,502	sd. sh. drilling
Listle, K. L., No. 1 Purisima, Santa Barbara Co.	33- 8-34	....	location
Duell, O. S., No. 1 Naples, Santa Barbara Co.	7- 4-29	5,132	suspended
Equity Oil Co., No. 1 Coal Oil Point, Santa Barbara Co.	24- 4-29	3,750	suspended
Bolsa Chica, No. 1 Coal Oil Point, Santa Barbara Co.	tideland	4,089	suspended
Bolsa Chica, No. 2 Coal Oil Point, Santa Barbara Co.	tideland	1,947	sd. sh. drilling
Cuyama Oil Co., No. 1 Cuyama, Santa Barbara Co.	12-10-27	2,387	suspended
Woodrow Pet., No. 1 Rincon, Ventura Co.	4- 3-24	6,840	hd. sh. drilling
Indian Pet., No. 1 Rincon, Ventura Co.	tideland	3,000	oil sd. drilling
Commander Oil Co., No. 1 Fillmore, Ventura Co.	13- 4-19	2,400	suspended
Hancock Oil Co., No. 1 Fillmore, Ventura Co.	13- 4-19	1,232	suspended
Honolulu Consolidated, No. 1 Miguelito, Ventura Co.	23- 3-24	5,270	hd. sd. drilling
Continental, No. 2 Miguelito, Ventura Co.	23- 3-24	2,287	sd. sh. drilling
C. C. M. O., No. 3-A Miguelito, Ventura Co.	23- 3-24	1,012	cemented
Midlands Pet., No. 1 Ojai, Ventura Co.	9- 3-23	5,750	hd. sh. drilling
Macrate, A. N., No. 1 Ojai, Ventura Co.	27- 4-23	2,071	suspended
Wilshire Oil Co., No. 1 Sulphur Mountain, Ventura Co.	20- 4-21	1,863	suspended
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	22- 4-21	1,051	br. sh. drilling
Hardison & Temple, No. 1 Timber Canyon, Ventura Co.	22- 4-21	248	suspended
Duell, O. S., No. 1 Timber Canyon, Ventura Co.	21- 4-20	316	cleaning out
Petro Producing Co., No. 1 Timber Canyon, Ventura Co.	18- 4-20	3,350	will deepen
Los Posas Pet., No. 1 Los Posas, Ventura Co.	22- 3-20	2,543	sd. sh. drilling
Wilshire Oil Co., No. 1 Bardsdale, Ventura Co.	12- 3-20	1,732	suspended
International Oil Developers, No. 1 Conejo, Ventura Co.	33- 2-20	2,770	reaming
Anderson, C. L., No. 1 Santa Susana, Ventura Co.	36- 3-18	1,030	reaming
Purman, T. H., No. 1 Gould Hills, Kern Co.	22-29-21	5,359	recemented
Purman, T. H., No. 2 Gould Hills, Kern Co.	27-29-21	335	suspended
General Pet., No. 1 McKittrick, Kern Co.	10-30-21	....	grade
Casa Mira Oil Co., No. 1 Belridge, Kern Co.	29-28-20	937	sd. sh. drilling
General Pet., No. 1 Belridge, Kern Co.	30-28-21	8,260	suspended
Milham Exploration Co., No. 24 Buttonwillow, Kern Co.	5-28-23	2,459	sd. sh. drilling
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	17-26-18	3,270	suspended
Holloway, A. S., No. 1 Devils Den, Kern Co.	11-25-18	1,848	suspended
Hanna, Tom, No. 1 Devils Den, Kern Co.	25-25-18	3,516	suspended
Pyramid Hills Oil Co., No. 1 Devils Den, Kern Co.	24-25-18	3,460	suspended
Fowler, F., No. 1 Blackwell Corner, Kern Co.	15-26-19	3,170	suspended
Rio Cal Pet., No. 1 Shale Hills, Kern Co.	2-27-18	3,355	resume work
Associated, No. 1 Lost Hills, Kern Co.	2-26-20	3,206	hd. sh. drilling
Seminole Oil Co., No. 1 Lost Hills, Kern Co.	29-25-21	rig	suspended
Caravel Pet. Co., No. 1 Edison, Kern Co.	19-30-30	216	suspended
Jergins, A. T., No. 1 Edison, Kern Co.	30-30-30	1,863	sd. sh. drilling
Mohawk Pet., No. 1 Weed Patch, Kern Co.	30-30-29	5,393	sd. sh. drilling
Hogan, Dana, No. 1 Weed Patch, Kern Co.	32-30-29	4,616	sd. sh. drilling
Descanso Oil Co., No. 1 Wheeler Ridge, Kern Co.	31-11-19	2,620	suspended
Western Minerals Co., No. 1 Madera, Madera Co.	21-10-17	rig	rigging up
Kingsburg Expl. Co., No. 1 Kingsburg, Fresno Co.	30-16-23	2,970	suspended
Bergman, Harry, No. 1 Kingsburg, Fresno Co.	12-12-11	3,405	hd. sd. drilling
Graham & Loftus, No. 1 Raisin City, Fresno Co.	20-15-18	3,979	hd. sh. drilling
Emerich Oil Co., No. 1 Mendota, Fresno Co.	35-13-13	55	sd. drilling
Kent & McDonald, No. 1 Carrizo Plains, S. Luis Obispo Co.	3-32-22	3,815	cleaning out
Emerich Oil Co., No. 1 Carrizo Plains, San Luis Obispo Co.	22-32-22	1,841	suspended
Paso Robles Oil Co., No. 1 Edna, San Luis Obispo Co.	27-27-11	4,191	suspended
Shell, No. 1 San Miguel, San Luis Obispo Co.	4-25-12	5,700	hd. sh. drilling
Pacific Inland, Well No. 1, Monterey Co.	18-23-15	3,441	suspended
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Brown, A. M., No. 1 Cloud, Kings Co.	10-23-19	307	cemented
Dudley Dome Oil Co., No. 1 Dudley Ridge, Kings Co.	9-23-20	3,012	suspended
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	6,873	will deepen
Kettleman Ridge Oil Co., No. 1 Avenal, Kings Co.	10-22-16	413	sd. sh. drilling
Magee & Stone, No. 1 Aipsaugh, Kings Co.	34-24-22	5,060	suspended
Dil-Harp Oil Co., No. 1 Delano, Tulare Co.	25-24-26	....	port. outfit
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	suspended
Napa Oil Co., No. 1 Griffith, Napa Co.	7- 8-3	3,273	suspended
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	5- 2-10	4,813	suspended
Rushing Oil Co., No. 1 Waterford, Stanislaus Co.	20- 3-13	2,681	suspended
Pacific Northern Oil Co., No. 1 Guinda, Yolo County	23-12-3	3,045	suspended
Buttes Oilfields Co., No. 1 Marysville, Sutter Co.	35-16-1	2,731	gas—shut in
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	34-16-1	rig	rigging up
Tehama Pet. Co., Well No. 1, Tehama Co.	4-22-15	2,904	gr. sh. drilling
Orland Synd., No. 1 Orland, Tehama Co.	31-23-3	3,748	suspended
Marker Drlg. Co., No. 1 Orland, Tehama Co.	21-23-5	3,030	suspended

Four Completions Reported in Central Michigan; Quiet Week in Central West and Kentucky

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

MOUNT PLEASANT, Mich., Apr. 10. Four completions were reported in the Central Michigan Field, three being dry holes and one an oil producer. The oil well was drilled by Columbia Oil & Gas Co. and is No. 3, 330 feet from the south line and 990 feet from the west line of the William H. Hill farm, SE SW NE Section 16, Greendale Township, Midland County, which produced 100 bbls. initially after treated with acid.

Theodore Oil Co.'s No. 2, 330 feet from the south line and 990 feet from the west line of the Adrian Steed farm, SE SW NW Section 9, Greendale Township, is reported a dry hole at 73 feet in the Dundee formation. Same company's No. 1, 990 feet from the north line and 330 feet from the east line of the Adrian Steed farm, NE NE SE Section 8, same township, has a fishing job where drilling tools are at the bottom of the hole at 3,200 feet, with hope of cleaning the hole and going down in the Dundee pay sand.

C. Fred White and others' test in the southeast corner of the Dennis and others farm, SE SE NW Section 3, Chippewa Township, Isabella County, was found dry in the Dundee formation at 3,632 feet. There was an oil showing and indications were for a light producer, but it has been given up as a failure.

Another wildcat venture pronounced dry was drilled by James G. Tiplady, trustee, in the southeast corner of the Henry and Susan Laycock farm, SE SE NW Section 11, Arcada Township, Gratiot County, at a total depth of 3,322 feet.

Leonard Petroleum Co. abandoned an old well in No. 2 on the Siens farm, Section 22, Vernon Township, Isabella County, and Gordon Oil Co. did the same with its No. 2 on the Talker farm, in Lee Township, Midland County.

Drilling Permits

Reed Oil Co. secured a permit to drill No. 2, 1,120 feet from the south line and 800 feet from the east line of the Laulson and Barlow farm, W half SE NE Section 8, Muskegon Township, Muskegon County. Talbot Oil Co. obtained a permit for No. C-4 on the State of Michigan land, SE SE SE Section 10, Greendale Township, Midland County. Permits were also issued to Goll, Graves & Meckling, for No. 1, 990 feet from the south and east lines of the Joseph Otway farm, NW SE SW Section 22, Porter Township, Midland County; to Old Dutch Oil & Gas Co. for No. 1, 420 feet from the south line and 330 feet from the east line of the W. C. Cotes farm, SE SE NW Section 29, Blue Lake Township, Muskegon County; to Strange Oil & Gas Co. for No. 1, 330 feet from the south and east lines of the Sam Walley farm, S half SE Section 16, Porter Township, Midland County; to Edward Stewart, for No. 1, 330 feet from the south line and 990 feet from the east line of the J. Richmond farm, SW SE NW Section 22, Porter Township, Midland County, and to Edward Stewart for No. 2 in the southeast corner of the J. Richmond farm, SE SE NW Section 22, same township.

Yost Lease

Pure Oil Co. was reported to be core drilling on No. 2-A on the Mattie Yost farm, NE NW Section 35, Greendale Township, Midland County, an offset test that failed to show production from the Dundee. Same company's No. 2, 2,310 feet from the north line and 990 feet from the east line of the T. E. McCann farm, SW SE SE Section 7, same township, is due for completion within a few days. According to reports the Pure company abandoned its No. 1, a semiwildcat venture on the Anna Corning estate, W half NE NE Section 34, Greendale Township, a half mile north of the Yost lease in the southern part of Greendale Township, after drilling to a depth of but 122 feet, where pipe trouble was encountered. It was believed no other test would be started on the lease, at least not at present, because the recent developments did not indicate a northern producing horizon.

Following C. W. Teater-Michigan & Pacific Oil & Gas Co.'s No. 2 Otway, Section 22, Porter Township, Midland County, drilled in February, a race is now on by several companies to develop the new district. No. 2 was a sensational wildcat when drilled in for around 1,000 bbls. initial. This well was opened several days ago for an open flow and made 900 bbls. in 24 hours and for the next 24 hours put 700 bbls. in tanks, against back pressure. It is now connected to pipe line and shows a small per cent of water. At first the oil was taken from the well which was pinched in, and part of the production was taken by the Peerless Oil Co., by truck tanks. The oil is now being handled by Pure Oil Co.'s 7-mile pipe line from the Otway lease to the Yost lease in Greendale Township. This line hooks up with Pure's tank farm in Greendale Township.

Mecosta County

Owing to the fact that there is no sale of natural gas in Mecosta County where James M. Taggart and others brought in a 4,000,000-foot well recently in a test 1,070 feet from the south line and 400 feet from the west line of the James H. Barton farm, NW SW SW Section 11, Austin Township, the firm will deepen the well and hunt for oil in the Dundee formation. The gas was found in the Michigan Series. Deepening the test into the Dundee will result in losing the gas well. Had there been a ready market for gas, or even a market in sight within the near future, the well would have been completed as a gas well and another test put down into the Dundee. It required a string of 862 feet of drive pipe on the Barton farm well, making drilling costs unusually heavy. Gas tests drilled there in the future probably will resort to rotary drilling. Precautions to prevent water encroachment are to be taken.

Midland County

In Porter Township, Midland County, now among the most active in the Central Michigan Field, the Pure Oil Co.'s No. 1, 1,650 feet from the south line and 2,310 feet from the east line of the P. O. Mates farm, SW NW SE Section 22, and a direct east offset to the big

(Continued on Next Page)

Two Dry Holes and Three Gas Wells Reported in Three Districts of Lower Eastern Fields

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Apr. 10.—The three districts of the lower eastern Field produced little in the way of completions during the week. Two dry holes and three gas wells was the total. None was of peculiar interest.

In Clay district, Ritchie County, West Virginia, the test of the Lucky Strike Oil Co. on the Edgar Hinton farm, near Ellensboro, continued to flow naturally and averaged over 200 bbls. a day for the week, proving the best producer in recent years. Other tests will soon be starting in this district, all scheduled for the Injun sand, a depth of around 1,900 feet.

SOUTHEAST OHIO

But one report of any completion was had from Southeast Ohio and that was a dry hole. In Chatham Township, Tract 16, Lot 21, Medina County, Curtis and Eaken drilled No. 8 on the Harriett Broadsword farm through the Berea grit and to a depth of 378 feet. The sand was faulted and void of production.

In Washington County the deep test of Benedum & Trees on the E. E. Knowlton farm in Section 10, Independent Township, was shut down for cable changes but drilling was resumed starting with a depth of 7,654 feet. The Clinton sand is expected in about another 50 feet from the recent showings of pink lime and shells.

In Licking County, McClay Brothers are drilling on the George Boyd farm in Section 3, Perry Township. In Coshocton County, the Preston Oil Co. is ready for a second test on the Ward A. Little farm, Section 17, Perry Township, and in Section 16 of that township the Weiser Oil Co. is going ahead with a test on the Abraham Crowthers farm.

WEST VIRGINIA

There were no producers completed in West Virginia but three gas wells. The heavy producer in Clay district, Ritchie County, has stirred up some excitement with several locations having been staked but the curtailment and low price of crude is acting as a sufficient deterrent.

In Boone County the Pure Oil Co. completed No. 59 on the Federal Coal Co. tract in Sherman district. It was completed in the Weir sand at 2,852 feet and is showing for about 200,000 feet a day.

In Calhoun County Jarvis and Ayers drilled their test on the Ida M. Whipkey farm in Sherman district through the Injun and Berea sands to a depth of 2,336 feet. These sands proved dry and the hole is being plugged back to the Maxon which showed enough gas to make a gas well. In Sheridan district, L. B. Carroll completed No. 3 on the Pell Shank farm in the Injun sand at a depth of 2,054 feet. It is showing for 250,000 feet natural.

In Roane County, the Big Sandy Oil & Gas Co. abandoned its efforts in a second test on the T. F. Smith farm in Geary district. The test was drilled through the Salt sand to a depth of 1,545 feet.

Drilling in West Virginia

Boone County now shows some activity. In Crook district, the Pure Oil Co. has spudded in and started drilling on the Pocatello Coal & Coke Co. The depth is 243 feet. In Sherman district the same company is grading a road to a location on the LaFollette, Robson and Pritchard lease G, and has made a location for No. 60 on the Federal Coal Co. property. In Scott district C. P. Jones and others are fishing for the bit in their test on the R. W. McKinney farm at a depth of 850 feet.

In Cabell County C. C. Wolfe and others are rigging up on the T. H. Tanner farm in Guyandotte district. In this district, the same operator has reached 1,330 feet in No. 5 on the Ben Lomond Land Co. and is down for casing, and has abandoned a test on the Calhoun and Justice lease after reaching 1,933 feet. R. H. Adkins and others have reached 1,170 feet on the E. H. Darnell and others lease. In McComas district, D. R. Campbell and others are drilling at 2,040 feet in a second test on the Gilbert Holton farm.

In Calhoun County, Poling and Mollahan are shut down at 2,104 feet on the A. Simons farm in Sherman district and are testing the Injun sand. C. B. Lewis and others have abandoned a location on the W. T. Kelley farm. Creed Barker and others have the material on the ground on the I. B. Fowler farm. In Sheridan district, W. T. and O. L. Yoke have shut down at 1,924 feet on the A. T. Yoke farm and are running casing. In Lee district, F. F. McIntosh is drilling at 1,531 feet on the Charles and John Davis farm. In Washington County, Norris and Cain has reached 1,735 feet on the John T. Miller farm.

Fayette County is shut down. In Gilmer County, A. E. Ellis and others are shut down for casing at 1,560 feet on the L. H. Lydick farm, DeKalb district. In this district, the same operators have part of the material on the ground on the Webster and Ware lease. No drilling is noted in Harrison County, but several old wells are being cleaned out.

Kanawha County is inactive. In Lincoln County, no new wells are drilling. In Logan County, the West Virginia Gas Co. remains shut down at 1,600 feet in No. 37 on the Guyan Mercury Co. tract, Logan district. In Chapmansville district, no further progress has been made in the Roberts and Jarrett test on the Hubert Ferrell farm.

In Marion County, Snodgrass and others are still fishing in No. 1 on the Absalom Holbert farm, Mannington district. This was being drilled to deeper sands and reached 2,895 feet. In this district, J. J. Allen and others have a road completed for a test on the James A. Haught farm. In Marshall County, no wells are drilling, and in Monongalia

County, two wells drilling are shut down. They are the test of the Browns Run Gas Co. on the James Marshall farm, Clay district, a depth of 2,115 feet, and the State Line Oil & Gas Co. on the Mary J. Straight farm at 2,415 feet.

In Pleasants County the Wheeling Oil Co. and the Pure Grit Oil Co. are actively drilling in Grant district on the Hammett farms. In Washington district Dinsmore & Co. have reached 1,500 feet in No. 6 on the John Boley farm, drilling deeper from the Cow Run to the Salt sand.

In Ritchie County the King Knob Oil & Gas Co. is rigging up on the Peyton Tingler farm in Murphy district. In Grant district, J. G. Charter is down 950 feet on the J. W. Harbert farm, and Herbert Flanagan is shut down at 1,935 feet testing in No. 1 on the Lucky Jenkins farm.

In Putnam County, the Teays Valley Drilling Co. is down 1,530 feet on the C. H. Cottle farm, Scott district. In Boone County the Reed Oil & Gas Co. has reached 1,625 feet in a second test on the E. S. Guthrie farm, Curtis district. D. S. Fisher and others have rigged up on the Stella V. Knotts farm, Spencer district.

Wetzel, Wirt and Wood Counties remain unchanged from last reports. In Wayne County the West Virginia Gas Co. has made a location on the C. M. Watts farm in Union district.

SOUTHWEST PENNSYLVANIA

In Southwest Pennsylvania but one completion was noted, the test of D. M. Simon & Co. on the Booth farm in Allegheny County back of Westview, which was an old Big Injun gasser and drilled down to the 30-foot sand. It is a gas well from this formation and showing some oil. In Richland Township, Burns and Anderson have a rig standing on the Helwig heirs farm.

In Amwell Township, Washington County, the test of the Wise Oil & Gas Co. on the M. Roach farm has reached a depth of 2,570 feet and is drilling in the 50-foot sand with a showing of gas and water. East of the pool about 1,000 feet, Hallam and Lewis have started drilling on the John Roach farm. Orrill and others have a rig standing for No. 3 on the Hazlett farm.

Greene and Beaver Counties are inactive.

The wildcats in Virginia remained shut down.

Central West Fields

(Continued from Preceding Page)

Otway farm well of C. W. Teater-Michigan Pacific's No. 2, is down below 2,500 feet and should be completed within a short period.

Gordon Oil and Teater's No. 1, 330 feet from the south line and 990 feet from the west line of the Phineas E. Baxter farm, SE SW NW Section 22, same township, is reported drilling around 2,300 feet, and is a diagonal northwest offsetting lease to the big Otway well. Two tests of a semiwildcat nature will have particular bearing on extensions of the Porter producing horizon. Pure Oil Co.'s No. 1 test, 2,310 feet from the south and east lines of the State-Porter farm, NW NW SE Section 15, Porter Township, is a mile north of No. 2 Otway.

Sun Oil Co. is drilling the first test well, in the southeast corner of the J. L. Miller estate, SE SE NW Section 16, Porter Township, a mile northwest of the Otway well. This test is of particular importance as it is on the trend toward the Yost lease, some geologists believing the producing horizon extends between the two leases.

L. G. Thompson's test in the southwest corner of the William A. Ryal farm, SW SW SW Section 3, Mount Haley Township, Midland County, failed to show oil or gas in the Berea sand formation. Hopes had been held that it would make production from the Berea as the Sims well a quarter of a mile away had a showing of oil from the Berea, and the well will be drilled to test the Dundee formation.

Oil Properties' McNitt estate's No. 1, 990 feet from the north and east lines of the farm, SW NE SE Section 1, Haring Township, Wexford County, is the only well under way in the county, and is reported drilling around 3,500 feet. Most of the leases in Wexford County have been returned to the owners, although Pure Oil Co. continues to hold some of its leases.

Jonesfield Township, Saginaw County, which adjoins Porter Township, Midland County, on the southeast is attracting attention at this time and considerable leasing has been done during the past couple of weeks and some test wells will be put down.

CENTRAL WEST

According to reports from St. Louis, there is much leasing on the outskirts of that city for the purpose of drilling in the near future. Two locations have been made, one on the Samuel Carter farm, 9 miles northeast of St. Louis, on the River Highway, and a derrick is starting on the Howard farm, north of the test under way on the Carter farm. These two developments are north of the Dupo Field in St. Clair County and the Waterloo Field in Monroe County where hundreds of shallow oil wells were brought in a few years ago and it is figured that the production runs north and south. Should the new tests prove commercial producers it will bring about much development work, practically on both sides of the Mississippi River.

Lima Field

No completions were reported from the old Lima Field of northwestern Ohio, although several wells are nearing the pay sand. D. Lyons and others' No. 2 on the James D. Watson farm, Section 1, Hopewell Township, Seneca County, is reported drilling at 1,505 feet and Sandusky Gas Co.'s No. 1 Anna Shoull farm, Section 10, same township, is drilling at 1,475 feet.

McPheron and others are reported drilling around 700 feet on the Oscar Smith farm, Section 35, Crane Township, Wyandot County, and O'Neal and others have a fishing job at 950 feet on the Arthur J. Ruhl farm, Section 1, Crawford Township, same county. Lewis-Ennis Oil & Gas Co. is drilling below 1,825 feet on the E. H. Brown farm, Sections 20-30, Grand Prairie Township, Marion County. Should this well prove commercial it will extend the producing area a long distance.

CENTRAL OHIO

White and others' test on the Celestia Kolb farm, Section 17, Plain Township, Stark County, Ohio, is a gas well in the Clinton lime from 4,494 to 4,519 feet. M. J. Purdy and others' No. 1 on the Ira and O. R. Cliff farm, Section 27, Somerset Township, Belmont County, was dry at a depth of 1,953 feet.

Numerous new locations were staked in some of the counties. In Ridgeville Township, Lorain County, McMillan and others made a location on the Belle Smith farm, Section 24. Spohn & Nachman are drilling on the Nina Freer farm, Section 7, Weller Township, Richland County. Wiser Oil Co. is reported around 2,800 feet on the Abe C. Crowthers farm, Section 18, Perry Township, Coshocton County. McClay Brothers' No. 3 on the George Boyd farm, Section 3, Perry Township, Licking County, topped the lime formation at 1,875 feet and is drilling ahead in hope of reaching oil or gas.

In Tuscarawas County, Oxford Township, Lynch Oil Co. has a rig in for No. 3, on the Robert McKeen farm, Sections 21-22. In Holmes County, Stoltz and others have a rig on the Joe E. Beech farm, Section 6, Berlin Township.

In Stark County, Jackson Township, East Ohio Gas Co. staked a location for No. 1 as well as No. 2 on the Leonard Stockert farm, Section 26. Brendal Producing Co. made a location on the J. S. Unger farm, Section 17, Plain Township, same county. Same company is shut down at 3,000 feet in No. 10 on the Lake Cable Co.'s land, Section 22, Jackson Township, same county. Cable and others are shut down at 2,950 feet on the O. Clovis farm, Section 25, same township, and Pfeiffer and others are shut down at 3,010 feet on the W. and T. Immel farm, Section 12, same township.

Wiser Oil Co. is reported drilling below 2,780 feet on the Abe C. Crowthers farm, Section 18, Perry Township, Coshocton County. McLaughlin and others have a fishing job at 815 feet in No. 2 on the W. H. Dyke farm, Section 9, Adams Township, Guernsey County.

INDIANA

In Hancock County, Brandywine Township, Indiana, Section 20, J. Harve Snider brought in a second test on the Sarah Ross farm, a very light producer.

C. J. Weideman's test on the Matt J. Schmitt farm, Section 3, Scott Township, Vanderburg County, developed into a dry hole at a total depth of 1,100 feet. L. R. Henley is drilling on the Nick Bassmeier farm, NE Section 15, Perry Township, same county. Knapp & Woods are drilling No. 1 on the Indiana Gas & Electric right-of-way, NW Section 33, Center Township, same county.

A pipe line is being laid from the Glendale Pool in Daviess County to connect with the line supplying the town of Washington, in the same county, with gas.

Several of the old shallow wells in Gillam Township, Jasper County, are being cleaned out and put to pumping. Hundreds of shallow wells were drilled in this county many years ago by an English syndicate and they have been idle for many years, the only use of them being by farmers in that area bailing the oil, which is a natural lubricant, and using it in automobiles or machinery.

Pike County is now the most active field in Ohio on account of the production of gas. Harry N. Bell is drilling No. 2 on the Charles R. Lucas farm, NE Section 18, Washington Township, at around 500 feet. Risher and others have started their No. 2 on the Henry J. Miley farm, NE Section 18, same township. H. A. Moore is shut down at his test on the E. E. Reed farm, NW Section 1, same township, and Charles C. Taliaferro, Jr., is drilling on the Charles E. Shaffer farm, SE Section 26, same township.

No change was noted in the Illinois fields, all wells being shut down.

No completions were reported from the Kentucky fields, most of the drilling wells being shut down.

Hints of Practical Value

By L. G. E. BIGNELL

Petroleum Engineering Editor

Testing Old Pipe

It is good practice to test any type of tubular goods that may have been used once and is intended for rerunning or re-laying. Pipe that may apparently be satisfactory for reuse as judged by general examination may, when subjected to a hydrostatic pressure test, be found unsuited for the purpose for which it is intended. All new pipe is tested at the factory and old pipe should be tested in the field.

There are many ways of conducting such field tests. Local conditions at the place where the test is to be made will have considerable influence on what may be done in the way of erecting semi-permanent testing apparatus. The method suggested is one that has been developed and used in Ohio fields and is applicable to nearly any place.

There are two conditions to be met in a test of this kind, the first is to fill the joint of pipe to be tested with water at relatively low pressure and at the same time expel all air from the pipe, and then to increase the pressure within the pipe to any reasonable test requirements.

Water in quantity may be available at the place where the test is to be conducted. In that event some of it may be wasted. If water is scarce the first requirement will be a small tank with a capacity of from 5 to 10 bbls.

This tank together with a small internal combustion engine driven pump can be mounted upon a truck bed. On the same truck a small hand operated high pressure pump can also be carried, this unit to be used for creating the higher pressure for the final test.

Caps of the proper size for the pipe to be tested should be provided and they should be drilled to accommodate the fittings enumerated later. The threads should be clean cut and case hardened so that they will serve as dies to clean the pipe threads when screwed on the ends of the pipe.

In the side of one cap a small hole should be drilled to accommodate a pet cock. When this cap has been screwed onto the pipe this pet cock should be turned so that it is pointed up and will serve as an escape valve to permit the air in the pipe to be removed as the water is pumped in. Another hole should be drilled in the end of this cap and fitted with nipple and stop-cock by means of which the pressure in the pipe at the end of the test can be relieved. This should be so placed as to be at a low point when the petcock is turned upward.

On the other end of the pipe another case hardened cap should be used that is drilled for the water connection. A hole large enough to accommodate a nipple of not less than 1-inch diameter should be drilled through the end of this cap. This is to admit the water for the test.

When the caps have been screwed into place a connection with the pumps can be made through the following fittings screwed together in the order of their listing: Reducing Railroad Union tee, nipple with pressure gauge, short nipple in run of tee, second tee for connections from hand pump, nipple in run of tee and stop-cock. Beyond the stop-cock a flexible hose is connected to conduct water from the low pressure power pump.

Into the second tee a reducer and short nipple is screwed and a stop-cock. Beyond this stop-cock pipe is connected to the hand pump. Pipe is needed on the suction side of both pumps to draw water from the tank or other source of supply.

When the union of the first railroad type tee has been connected with the nipple in the end of the cap the apparatus is ready for the test. The engine is started and the power pump will fill the joint of pipe with water and drive the air out through the pet cock. When all the air has escaped the pet cock is closed. The cock between power pump and pipe under test is next closed and the cock to hand pump opened and the pressure built up to the minimum by the use of this small pump.

The gauge pressure is registered on the pressure gauge. The pipe should be tapped with a hand hammer while under pressure to free scale or foreign material from the inner wall. When the pipe has been tested the cock on the cap carrying the pet cock is opened and the internal pressure relieved by drawing off the water. If the water is to be reused this discharge connection should be connected with the water source by a pipe line and the water returned to the portable tank.

This hookup can be varied slightly to suit local conditions. With such an arrangement it is possible to test a joint of pipe in five or six minutes with two men handling all equipment and pipe.

Colorado Operators Watch Weld County Test; Four Tests Are Started in Baxter Basin Field

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Apr. 10.—New method of prorating Hobbs crude, which was to have gone into effect April 1, will be adopted as soon as all operators sign the agreement. Allowable outlet for first half of April was reduced to 28,894 bbls. daily. Continental Oil Co.'s No. 1-B State, on the northwest side of the pool, gauged 5,216 bbls. of oil and 4,926,000 feet of gas. The edge wells on the north which came in making water have shown no change.

Colorado operators are watching No. 1 Anthes, in Weld County, which is expected to yield important geological information within the next 200 feet. Two wells in Park County are resuming and one new operation is starting in the Hiawatha district in Moffat County.

In Wyoming, Mountain Fuel Supply Co. is getting four wells under way in the Baxter Basin Field, a test of the North Boone Dome in Natrona County is ready to spud and several wells which have been idle are resuming. Osage operators are trying to force crude price up to $1.25 per barrel.

In Montana, one well is being completed as an average producer in the Cut Bank Field.

NEW MEXICO

Lea County

The allowable outlet for the Hobbs Pool was reduced from 30,475 bbls. daily for the last half of March to 28,894 bbls. daily for the first half of April. The decrease of 1,581 bbls. daily was taken care of principally in a reduction from 6,000 to 4,500 bbls. of the nomination of the Atlantic Pipe Line Co. for its purchases during the first half of the current month. The schedule as of April 1, issued by Umpire C. G. Staley, prorates the production on the old method (25 per cent on acreage and 75 per cent on potential) instead of the new method (40 per cent on acreage and 60 per cent on potential) which it was expected would be put into effect on that date. Umpire Staley states this was due to the fact that all necessary signatures to the agreement have not yet been obtained. The old method will continue until all sign the agreement or until otherwise advised. The potential of the pool as of April 1 was 1,242,843 bbls. daily from 191 wells on 171 units of 40 acres each.

The only completion reported was Continental Oil Co.'s No. 1-B State-25, NE cor. NW Section 25-18-37, on the northwestern side of the pool, which last week was waiting for official gauging. It was rated at 3,564 bbls. of oil and 2,463,000 feet of gas daily through the tubing and 5,216 bbls. and 4,926,000 feet through the casing. It was drilled to 4,225 feet. Top of the anhydrite was at 1,605 feet, top of the salt at 1,715 feet, base of the salt at 2,678 feet and top of the brown lime at 2,920 feet. Elevation is 3,668 feet.

Humble Oil & Refining Co.'s No. 1 Hardin, SW cor. NW Section 18-18-38, which found the northern limit to the productive area, swabbed 95 per cent water after plugging back from a total depth of 4,247 feet to 4,207 feet. It is shut down for orders.

Amerada Petroleum Corp.'s No. 3 Hardin, NW cor. SW Section 18-18-38, a south offset to the Humble well, is flowing 1,750 bbls. of sulphur water per day and no oil on a gas lift from a total depth of 4,160 feet.

Texas Pacific Coal & Oil Co.'s No. 4-G State, SW cor. NE Section 24-18-37, is drilling at 102 feet in sand. The California Co.'s No. 2 McKinley, C SW NW Section 20-18-38, is drilling at 3,797 feet and will be an early completion. Stanolind Oil & Gas Co.'s No. 29 Byers, C SW NW Section 3-19-38, and its No. 8 State, C NW NE Section 9-19-38, are both rigging up.

In the Eunice area, Atlantic Oil Producing Co.'s No. 1-B State, C NW SE Section 8-21-36, is drilling at 3,640 feet in sandy lime and will standardize at 3,720 feet.

In the Lea area, The Texas Company's No. 3-A Lynch, C NW NE Section 34-20-34, is rigging up.

In the Jal area, The Texas Company's No. 1-B Shepherd, NW cor. SW Section 5-26-37, is bottomed at 3,184 feet and fishing for bailer and tools. Continental Oil Co.'s No. 1-A Wells, SW NE NW Section 12-25-36, joint with California Co., is bottomed at 575 feet, rigging up rotary and digging a water well. E. B. Guess' No. 1 Conditt, C SW SW Section 12-25-36, is spudding at 25 feet.

Eddy County

Finley, Woods & Brainard's No. 5 Brainard, C NW SW Section 5-18-27, in the Compton area, had a good show of oil in sand at 1,848-54 feet. The oil rose 250 feet in the hole. Barnsdall Oil Corp.'s No. 1 Dodd, SW SE SW Section 22-17-29, Jackson area, reran 6⅝-inch to bottom at 2,379 feet and cemented with two sacks. R. Spearow and others' No. 1 McClellan, SW NW NE Section 22-22-23, Indian Creek, is shut down at 1,528 feet in lime after cleaning out and running the 10-inch.

San Juan County

Fred Barrett's No. 1 Hart, Section 11-29-11, Fulcher Basin, is drilling below 500 feet, and Gobernador Oil Co.'s No. 1 Likens, SW NE SW Section 12-29-9w, Blanco district, is drilling at 2,200 feet and prospects are not reported encouraging.

De Baca County

Landowners Oil Co.'s No. 1 State, SW cor. NE Section 16-1s-27, Buffalo Creek, is shut down at 5,860 feet.

COLORADO

Continental Oil Co. and others' No. 1 Anthes, C NE NE Section 24-8n-59, in the Buckingham district in Weld County, upon which the attention of the Colorado operators is now closely centered, is expected to reveal some definite information this week as to how high the formations are running in comparison with the Ramsey gas well 5 miles south. It is drilling at 5,917 feet and the top of the Timpas, the first definite marker, is expected within 100 to 200 feet. One estimate places it within 75 feet. That for-

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Alberta Government Issues New Regulations for Conservation of Turner Valley Gas

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Apr. 8.—In the Athabaska district, northern Alberta, Athadome Oils' No. 2, LSD 3, Section 15-66-23w4, is reported to have encountered a strong gas flow around 1,315 feet. Production was estimated at 2,000,000 feet a day. The hole is being deepened in hope of getting commercial oil production. The test is close to the town of Athabaska Landing, and is being drilled by Athadone Oils, Ltd., of Toronto. Athadome's No. 1, drilled last year, NE Section 20-72-4w4, got considerable gas at a somewhat greater depth and was abandoned at 1,800 feet when salt water was struck. No. 2, some miles south, is apparently higher on the structure.

Turner Valley Conservation

The policy of the Alberta government in respect to Turner Valley conservation was announced in a resolution submitted to the legislature by J. E. Brownlee. The resolution involves complete shelving of the policy proposed by the Turner Valley Gas Conservation Board and the placing of Turner Valley operations under the direction of the technical division of the department of lands and mines. The resolution follows:

"Resolved, that the conservation of gas as commenced by the Turner Valley Gas Conservation Board, be continued under the direction of the technical division of the department of lands and mines.

"That subject to said regulations or amendments the gas production of each well be restricted to as nearly as possible 40 per cent of the open flow.

"That all gas-producing wells be equipped with meters.

"That the regulations restricting or prohibiting the drilling into the dolomite limestone be rescinded."

The new government proposals are expected to end a controversy in progress for nearly two years. The Alberta government last May appointed the Turner Valley Gas Conservation Board, comprising Judge A. A. Carpenter, Dr. R. C. Wallace and John McLeish, to enforce temporary conservation measures, conduct systematic tests, and work out a permanent conservation policy. The field was thereupon restricted to a maximum flow of 200,000,000 feet a day, with quotas to individual wells. Tests, commenced in June, were completed in November, and considerable data with reference to flows, pressures and the probable life of the field was accumulated. The conservation board about a month ago completed and submitted its report, containing the accumulated information and suggesting a working policy. The open flow was to be limited to 200,000,000 feet a day with provision for further reduction if additional tests indicated the need. Gas quotas were allotted to individual wells on an acreage basis, with an allotment for undeveloped acreage and a reserve for new wells, and provision was made for the transfer of quotas.

The government proposals, which will undoubtedly be adopted by the legislature, represents a considerable concession to the views of the independent operators. It is estimated the placing of the field on a basis of 40 per cent of open flow will mean an aggregate of 320,000,000 feet a day, the open flow being estimated at 800,000,000 feet a day. This will mean a substantial increase in the crude naphtha production in the near future. For the time being the field will continue operations on the basis established by the conservation board.

The rescinding of the prohibition, enacted in December, 1931, against drilling into the dolomite limestone was recommended in the conservation board's report. As a result new tests could not be drilled into the crude naphtha horizon of the Madison; though tests started before the prohibition was enacted could be drilled into the lime. Under the new arrangement, testing of the crude naphtha horizon is possible anywhere; and this is expected to open the way to additional drilling, particularly in the South Turner Valley area.

The new policy will mean an increase in the amount of waste gas. No intimation has been given as to the possible relaxing of existing restrictions on the export of this surplus gas from Alberta. A number of pipe line projects have been mooted, and these may now receive encouragement.

South Turner Valley

In the South Turner Valley, Mar-Jon-Freehold's No. 1, LSD 9, Section 28-18-2w5, will be drilled deeper into the lime from 5,845 feet. At the latter depth a heavy wet gas flow, estimated at more than 16,000,000 feet a day, was encountered, with a crude naphtha recovery definitely testing more than 400 bbls. a day. At this depth the drilling had not reached the main porous horizon of the lime, where larger production can be expected. The test is shut down waiting for about 2,500 feet of drill pipe.

W. Fay Becker Syndicate's No. 2 Anaconda, LSD 15, Section 28-18-2w5, may now be drilled into the Madison.

Two new tests are definitely planned for the same section. Mid-Royal Oils' rig is being moved from location in Section

31-19-2w5, to the Ray R. Knight acreage in Section 28, where Knight-Mid-Royal's No. 1 will be drilled as a test of the deep lime. Mid-Royal's No. 1, LSD 4, Section 31-19-2w5, standing at 2,140 feet, may be completed later.

North Turner Valley

In the North Turner Valley, United Oils' No. 4, LSD 2, Section 24-20-3w5, is at 5,522 feet and will shortly test the light crude from the Dalhousie sand. It looks like a small commercial producer.

Test in Rickert Field

In the southern Alberta foothills, Paramount Oil Co.'s No. 1, LSD 2, Section 28-19-4w5, is reported preparing to resume, after a prolonged shutdown at 2,286 feet. The field was located by Julius Rickert. It is some distance west of the Turner Valley, occupying apparently a parallel fold.

South Turner Valley Prospect

A Saskatchewan group headed by Sydney H. Oliver of Fairmount, Saskatchewan, is reported negotiating for development of untested acreage in South Turner Valley. The group has a portion of LSD 10, Section 28-18-2w5, west of Mar-Jon-Freehold and Merland's No. 1 producers.

Twin River Test

On the Twin River structure southeast of Lethbridge, Nordon-Roney's No. 2 Twin River, LSD 11, Section 2-2-20w4, rotary test, is reported below 2,250 feet and making up to 75 feet a day of new hole. The test is logging higher than Parco Oil Co.'s No. 1 Twin River, which was farther south on the structure and got a small producer of high grade crude in the top of the Madison. No. 2 well has encountered two small shows of gas, one at 650 feet and the other between 1,300 and 1,400 feet, while no water trouble has been reported.

Blood Reserve Prospect

Negotiations are under way for the drilling of a commercial test on the Blood Indian Reserve near Lethbridge. Some years ago the area was blanketed by Commonwealth Petroleum, Ltd., of Calgary, and this company has put down 12 structure tests, none exceeding 1,000 feet. The acreage core drilled between 1928 and 1930 was in Townships 7, 8 and 9, Ranges 22 and 23 west of the forty-fifth meridian. Some of this work was done in conjunction with Associated Securities, Ltd., of Moose Jaw, Saskatchewan, and the Saskatchewan company is to secure the drilling of the proposed test.

Ontario Drilling

In Orford Township, Kent County, Ontario, Vacuum Gas & Oil Co.'s No. 5, Lot 53, South Talbot Road, encountered a small show of gas in a formation around 1,530 feet thought to be the Salina, the same at which Vacuum's No. 4, north of the Talbot Road, got its showing. It is being abandoned. It is doubtful if further drilling will be done by the company in this area, though the presence of small gas shows in the two tests may indicate a fair possibility of commercial production at some point where conditions are more favorable.

In the old Tilbury Field, Glenwood Syndicate's No. 2 has been located in NW S half Lot 10, Concession 13, Tilbury East Township.

Rocky Mountain

(Continued from Preceding Page)

mation will be cored. The Timpas has varied considerably in thickness in the wells drilled out in that district. Top of the Muddy is expected about 400 feet below the bottom of the Timpas.

Morgan County

Ohio Oil Co.'s No. 1 Butters, C SW SW Section 7-6n-60, in the Greasewood area, which made 30 bbls. per day initially on the swab when completed last fall, is being pumped and experimented upon. The past week it made 96 bbls. in three pumpings. It made 54 bbls. the first day, some of which probably was accumulated oil. It will be shut down for 24 hours and then will be produced again to determine how fast the oil is coming in.

Park County

South Park Oil & Gas Co.'s No. 1 Esche, SE cor. NW Section 5-9s-76, Muleshoe district, is bottomed at 2,465 feet and pulling casing. It will test a show of oil in the Muddy sand and then will continue to the Morrison. South Park Oil Co.'s No. 1 Milligan, NE cor. SE Section 13-8s-76, Jefferson district, is moving in material salvaged from the old Mutual well north of Canon City and will complete this well and drill another farther north.

Moffat County

Mountain Fuel Supply Co. is preparing to drill this spring its No. 2 Florence Wilson, C NE NE Section 22-12n-100, Hiawatha district, for which rig was completed late in 1929. This well is one-quarter of a mile northeast of its No. 1 Wilson, the discovery well, and half a mile north of No. 1 Kuykendall, two gas wells which during the past year have been reported showing some oil. A few months ago the company deepened one of the wells a few feet and did some experimenting to determine the quantity of oil and its source. It has just completed the fabrication of a small refining unit at its Rock Springs shops which will be moved into the field to supply gasoline for its own use and the use of affiliated companies.

Larimer County

C. Leonard Smith's No. 2 Union Pacific, SW cor. Section 31-12n-69, Sand Creek, is bottomed at 520 feet and running 8¼-inch to shut off water in a sand encountered at 445 feet. It has less than 200 feet to go to reach the objective.

Fremont County

Dr. T. A. Davis' No. 7 Mojada, NE SW SE Section 21-20-69, Florence district, is drilling at 1,290 feet and had a show of gas at 1,175 feet in blue shale. Cherry Creek Placer Co.'s No. 1 Lucas, SW cor. NE Section 32-18-69, is preparing to resume at 1,300 feet.

WYOMING

Sweetwater County

Mountain Fuel Supply Co. is getting away to a start on its spring drilling campaign in the Baxter Basin Field. Its No. 2 Cappers, SW cor. NW Section 12-19-104, North Baxter Basin, is drilling at 122 feet, and its No. 2 Mullen, SW NE SE Section 2-17-104, South Baxter Basin, is rigging up. No. 3 Poston, C NW SW Section 22-16-104, is still a location, as is also its No. 2 Union Pacific, SE cor. NW Section 21-16-104.

Fremont County

The Texas Company's No. 2 State-Ridgway, SE SW SW Section 36-34-95, Alkali Butte, which plugged back from 5,460 feet to 4,875 feet, has drilled out plug to 4,975 feet and after pulling tubing, is testing through the casing. It is making considerable gas from 25 feet of sand in the Morrison.

Carbon County

Ohio Oil Co.'s No. 1 Hazlett, SW Section 34-23-79, Allen Lake, is standing after rigging up. Reeder Oil Co., Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Pass Creek Dome, has rig completed and let contract to M. E. Tolles.

Natrona County

Triangle Oil Co. (Woodruff, Wiley and Ames) is preparing to drill a test to the Shannon sand on the North Boone Dome in its No. 1 Ames, SE cor. Section 29-36-85, northwest of Casper. A spudder is on location. Ohio Oil Co. drilled a test on this structure in 1917 and had a show of oil at 660-90 feet in the Shannon sand. The hole was then carried to 1,185 feet and abandoned. This hole was cleaned out by the new operator and 500 feet of fluid, part of which was oil, was found standing in the hole. The structure adjoins on the north the Boone Dome where New York Oil Co. has four gas wells which averaged around 2,000,000 feet per day each when completed.

Leo B. Murphy and others' No. 1, SE NW Section 29-33-80, North Platte, has resumed after being idle for the past two months and is running 8¼-inch at a total depth of 840 feet to shut off water encountered in the Dakota, topped at 720 feet.

Mutual Oil Syndicate (S. H. Keoughan and others) is drilling its first core hole on the Midway structure 700 feet southwest of No. 11 Middy, C NE NE Section 23-35-79, the discovery well. It is drilling in shale at 700 feet and at 20 feet it went into an 8-foot coal vein. A 4-foot vein was cut between 455 and 470 feet. It will go to the Shannon sand at 2,500 feet. This is the first of a series of core hole tests to be drilled to work out the structure on the Shannon sand. An outfit designed by Mr. Keoughan is being used. It is a portable rotary outfit mounted on a truck. One of its unique features is a mast operated by hydraulic pressure.

Carbon County

Ohio Oil Co.'s No. 9 Souders, C NE SW Section 2-7s-21, the only active operation in the Dry Creek district, is drilling at 5,225 feet with the Dakota as the next objective.

Glacier County

One producer is being completed in the Cut Bank Field, Alberta-Pacific Consolidated Oil Co.'s No. 1 Kiesel, NE cor. NW Section 11-34-6w. It had a show in the Stewart sand at 2,780-86 feet and from the top of the Darling sand at 2,805 feet the oil rose 700 feet in the hole. It increased to 1,500 feet at 2,816 feet, the present drilling depth.

Santa Rita Oil & Gas Co. and P. T. Sweeney's No. 1 Jacobson, C NW NW Section 23-37-5w, is drilling at 1,060 feet, and Santa Rita's No. 1 Blackfeet, C SW NE Section 15-35-6w, is drilling in the Kootenai at 2,750 feet. R. C. Tarrant's No. 1 Miller, C NE NE Section 24-34-6w, is drilling at 1,675 feet, and his No. 2 Haglund, Jr., C NW SE Section 13-34-6w, is rigging up. Alberta-Pacific's No. 2 Matson, SE NE SW Section 14-34-6w, is building rig, and W. M. Fulton and others' No. 1 Haggerty, NE cor. Section 16-34-6w, is drilling at 1,760 feet. Hannah-Porter Co.'s No. 1 Britton, NW NE NE Section 23-34-6w, is waiting at 600 feet after cementing the 13-inch at 575 feet. Par Oil Co., of Great Falls, has taken over B. & H. Oil Co.'s No. 1 Haines, SE SE Section 2-34-6w, an old well which has been on production for some time with considerable junk at the bottom. Rig is up to start cleaning out and drill deeper.

UTAH

Arrowhead Petroleum Corp.'s No. 1, SE SW NE Section 1-43-15w, Punchbowl district, Washington County, is reported resuming at 4,000 feet after having been idle for some time. Contract has been let to A. P. Mitchell, of St. George, to complete. Virgin Petroleum Co.'s No. 2, NW NE Section 23-41-12w, Virgin district, is bottomed at 2,870 feet and preparing to run a string of 4¾-inch and test a show of oil.

Proration of Oil Fields by Pressure Control

(Continued from Page 26)

tive ratios can be most quickly obtained by taking the total pressure drops and productions to date. The original pressure for the field can be estimated fairly closely from available data, and it may be assumed that all properties had the same original pressure. The next step will be to determine the present pressure for each property. It would take some weeks to make a complete survey of the field, so it is suggested that tests be made of representative wells, say, 10 per cent of the whole, from which a pressure contour map for the field can be made. From this the pressures for the field and for each property will be determined. The pressure-production ratios will be found by dividing the production to date for the field by the pounds of pressure lost to date. In a similar manner the pressure-production ratio for each property will be found by dividing its production to date by the pressure loss to date. From these factors and the allowable production for the field, can be computed the expected loss in pressure for the field and for each property for the ensuing period, and an allocation made between properties of the field's daily allowable production.

Example

The following examples, based upon assumed facts, illustrate the method:

Estimated initial field pressure, lbs... 2,500
Present average field pressure, lbs..... 2,000
Daily proration allowable, bbls. 300,000
Total production to date, bbls. .. 200,000,000

$$\frac{200{,}000{,}000 \text{ bbls.}}{500 \text{ lbs. loss}} = 400{,}000 \text{ bbls. per lb. (production-pressure ratio)}$$

Total production for 60 days at 300,000 bbls. per day, bbls. 18,000,000

$$\frac{18{,}000{,}000 \text{ bbls.}}{400{,}000 \text{ bbls./lb.}} = 45 \text{ lbs. estimated pressure loss.}$$

$$\frac{45 \text{ lbs.}}{2{,}000 \text{ lbs.}} = 2.25 \text{ per cent allowable pressure loss.}$$

PROPERTY A

Four wells, present pressure, lbs. 2,100
Total production to date, bbls. 200,000

$$\frac{200{,}000 \text{ bbls.}}{400 \text{ lbs. loss}} = 500 \text{ bbls. per lb. (production-pressure ratio.)}$$

2.25 per cent of present pressure is 47.25 lbs. allowable loss.
47.25×500 bbls./lb., 23,650 bbls. allowable production for 60-day period; 394 bbls. per day; 98.5 bbls. per day per well.

PROPERTY B

Two wells, present pressure, lbs. 1,900
Total production to date, bbls. 100,000

$$\frac{100{,}000 \text{ bbls.}}{600 \text{ lbs. loss}} = 166.7 \text{ bbls. per lb. (production-pressure ratio)}$$

2.25 per cent of present pressure is 42.75 lbs. allowable loss.
42.75×166.7 bbls., 7,125 bbls. for 60-day period; 118.7 bbls. per day; 59.4 bbls. per day per well.

Illegal Oil

A third legal question arises here. In setting these allowables, should illegally run oil be considered? Not to do so will cause low allowables for the properties from which much illegal oil has been run. Such properties will show a larger pressure loss, but less production, and therefore a smaller pressure-production ratio, and a smaller allowable than their neighbors, who have not overproduced. However this will quickly be adjusted in following periods to the true capacity of the property, regardless of whether it had over or underproduced in the past. It is assumed here that only legally reported and provable runs will be considered.

The above example shows this principle. Properties A and B apparently have reported the same rate of production, and a grand total in the same proportion as the number of wells. B has produced unreported oil in excess of his allowable until his pressure is 200 pounds lower than A. As a result his production-pressure ratio is only one-third that of A; his allowed pressure drop for the period is less, and his daily rate per well far below that of the first property.

After the first preliminary pressure testing, a regular plan for periodic testing can be instituted. It is believed it will thereafter be found desirable in a field like Oklahoma City to test each well in order to detect and equalize local irregularities, which will show drainage and point to excess runs. It is not necessary that the tests be made throughout the field at the same time, but it is important that tests on adjacent wells be made within a day or two of each other. The tests would start at one end of the field and progress systematically to the other end, covering the field within the correction period, say 90 days. Immediately one survey was finished, the next survey would be started so that testing would be going on continuously and each well would be tested at intervals of around 90 days. At the end of each day

plans would be made for testing for the ensuing days, and the operators could be advised, say, three days ahead of the time each well was to be tested, so that they could prepare for it. It will probably be found desirable to have the wells shut in three days ahead and remain shut in three days after the test. By this system, adjacent wells should be tested not more than one or two days apart, and with all nearby wells shut in.

Such a system would involve a minimum of expense and it is believed that four or five testing crews could test every well in the field each 90 days. If it were found satisfactory, the cost could be halved by testing alternate wells each period. The field would be tested each 90 days, but each well at intervals of 180 days. Experience would show how often the wells should be tested.

Pressure-Production Ratios

Pressure-production ratios would be set for each property as soon as the tests on it were completed, taking the runs since the last test and the pressure drop. In this way allowables for individual properties would not all be made at the same time but at different times. In the event the allowable production for the whole field were changed, the percentage change would at once be applied uniformly to all properties, that is, if the field allowable had been 100,000 bbls. daily and it was to be reduced to 90,000 bbls. daily, 10 per cent would be taken uniformly from the allowables for every property.

It is believed the most practicable way of making production allowances in a field in which unequal pressures have arisen, is to allow each property the same percentage drop in pressure. For example, if in one part of the pool the pressures were 2,000 pounds and in another part 1,000 pounds, and the allowable pressure drop for the field were 10 per cent for the ensuing period, the high pressure property would be allowed 200 pounds and the low pressure property 100 pounds pressure drop. By this system the pressures measured in pounds in different parts of the pool would approach closer and closer each period, though the relative pressures would remain the same. If all properties were allowed the same drop in pounds pressure, relative inequalities would become greater and greater. In the illustration above, the high pressure is twice the low pressure but after 500 pounds had been taken from each, the high would become three times the low pressure and so on. If on the other hand, an attempt was made to bring about uniformity at the earliest possible moment, it might be necessary to shut in some of the low pressure properties by as much as a year before the high pressure properties had dropped to the same level. Comparison of percentage and equal loss rates of pressure decline is illustrated in Figure 1.

Where there are large local differences in pressure, special adjustments should be made to prevent the continuance of serious drainage. If for example, there were a gradual increase of 500 pounds in pressure from one end of the field to the other, it would not seriously affect any one property. Except for the extreme ends of the field, each property would receive about as much gain from drainage on one side as it lost on the other. But 500 pounds between adjacent properties would be very serious and should not be allowed to continue.

Master Pressure Contour Map

After the first regular test period, the local irregularities would show up. It is suggested that from the pressure tests a master pressure contour map be made that would set up pressure gradients throughout the field, such that serious drainage between properties would not take place. This would be the guide for pressure allowances and an endeavor would be made to bring the individual properties and wells to their pressure contours as soon as practicable. It would be desirable in the beginning to modify the percentage allowances to the extent necessary to bring the individual wells and properties in line within a reasonable time. The most drastic procedure would be to shut in the low pressure properties until the pressures of the adjacent properties had dropped to the same level, as shown by the master contour map; but if this was thought inadvisable, they could be allowed a smaller percentage and the high pressure properties a larger percentage, and thus bring them to their proper pressure levels in a reasonable length of time.

The master-pressure contour map would of course be changing as the pressures continually lowered but by equal percentages. After a few test periods, the pressure drops could be closely estimated from the productions taken so that the pressure contour map could be brought up to any date. The periodic tests would then show local deviations and allowance could be made for correction during the ensuing period.

If, for example, a property had overproduced, it would show less than the allowed pressure. This would be deducted from its allowance for the next period, in other words, it would be allowed a correspondingly small percentage drop in pressure if it had run below and a higher percentage if above. If it had overproduced and not reported the runs, it would be penalized still further, for it would show a low pressure and also a low pressure-production ratio. The result would be that its next period's production would be greatly curtailed and thus automatically tend to correct illegal runs whether detected or not. Changes in the pressure-production ratios would also direct suspicion toward those producing unreported oil. As stated in the prior article, it is believed this system would automatically minimize the opportunities for illegal production and penalize and detect those who engaged in it.

After the transition period, during which local irregularities will have been eliminated and the field placed on regular pressure gradients, the procedure would be to continue the systematic testing, keeping the master pressure contour map up to date and from it adjusting allowables for over and under produced properties, or for inaccuracies or for special and temporary conditions that might have affected the properties during the preceding period. The producer would be advised after each test of his pressures and his allowances for the ensuing period, that is, how many barrels of oil he could withdraw each day, which would not be changed until the next period, unless a change was made in the total allowable for the field or unless check tests should show important inaccuracies. This would continue until proration was lifted from the field.

Unit Pressures

The question will arise, should the pressure-production ratio be based upon cumulative production and pressure to date, or upon the production and pressure drop for the preceding period? It is believed the latter will be preferable for it will be more sensitive in detecting and correcting errors or abuses and in showing the effects of changes in operating methods. If there is shown a wide difference in the ratios from one period to the next, the cause should at once be sought. It is believed that the property should be the unit for establishing allowables, the average well pressures being taken to establish the ratio for the property, though experience might show that it would be desirable under some conditions to make each well a separate unit. In any event pressures much below the contour on the master map should not be allowed in any well, otherwise, especially on a large property, the oil could be taken from line wells, thus lowering their pressures and inducing drainage toward them. It woud also be advisable to make the property owners take their oil regularly instead of all at one time during the period.

Water Encroachment

There remain to be considered some of the special conditions that must be met in every pool. One of these is water encroachment. If the edgewater advances rapidly, it will hold up pressures of edge properties and cause high pressure-production ratios and high allowables. However, if such properties are to get the recoverable oil under them, it must be withdrawn before the water advances across them and pushes oil onto the next higher properties. Edge leases would have higher allowables but shorter lives under this system.

In the gassy parts of the field, the proposed system would operate as follows. If one property had a gas-oil ratio of 1,000 cubic feet per barrel and another 10,000 cubic feet barrel, and the sand had the same thickness and porosity, the second property would produce 10 times as much gas for each barrel of oil and consequently draw down pressure 10 times as fast, for the gas is the main pressure agent. The result would be that the two properties would produce equal quantities of gas daily, but the gassy property would produce only a tenth as much oil, if the proposed system were applied unmodified. This would effect equitable takings from the common supply, and equitable use of pressure, although at a loss in efficient use of the gas. But as stated, this article is written solely from the standpoint of assuring equities between property owners. After a system for equitable withdrawals has been worked out, it then becomes the duty of the proper authorities to say how and to what extent these private rights should be abridged to effect conservation of the oil and gas in the public interest. This will be discussed in a following article.

Undrilled Area

One of the special conditions present in the Oklahoma City Pool is the large undrilled area underlying the restricted district at the north end of the pool. Wells near the edge of this area will draw from it both oil and gas; they will hold up better; will have higher pressure-production ratios; and eventually will produce more oil than wells not so favored. This will be at the expense of the undrilled parts of the field.

There is no way to prevent this drainage and nothing the operator of the edge leases can do will stop it. The only way it could be stopped would be to drill up the restricted property. As this is against public interest, it is presumed the rights of the individual property owners must be sacrificed. It would not interfere with the proposed proration system. (If the property owners have any redress, it would have to be determined through the courts.)

Cases will arise where because of real causes or subterfuge pressure tests of a well or group of wells cannot be made. In such cases either the average of pressure and of production-pressure ratios can be used, or the lowest of the adjacent wells be assumed. The latter course would tend to discourage subterfuge, but every effort should be made to take the pressures as a check against illegal runs. While reasonably equitable proration can be accomplished from tests upon representative wells, it would be desirable where practical to take pressures on all the wells in order to aid in the detection of excessive withdrawals.

The proposed system presumes that offset wells will be at equal distances from their common property line, otherwise the closer well will drain the farther well if equal pressures are carried. If, for example, one well was 150 feet and the other 300 feet, under uniform sand conditions, the first would drain 75 feet onto the second property. The best solution is to prohibit, so far as can be done, drilling inside a minimum distance from the property line, and allow the offsetting operators to protect their interests by drilling at the same distance. In the event this has not been possible, a higher pressure can be carried on the closer well to equalise the distance. The method for determining the proper equalization pressure is omitted here for reasons of brevity.

Efficient Operation

It is also necessary that each operator drill and operate his wells in an efficient manner, if he is to get his share of the common supply. His wells should be drilled deep enough into the sand to drain all parts of it, and maintained in proper mechanical condition to produce all the oil and to show all the pressure in the sand. If the well is operated with an unnecessary high oil-gas ratio, the operator will penalize himself because it will unnecessarily deplete his pressure. Or, if a well is filled with mud, it may not build up to its maximum pressure.

The writers believe that the principle of prorating by bottom hole pressures (which is not original with them) offers the only practical means so far advanced that will assure substantially equitable withdrawals from an oil field. The specific plan proposed by the writers in the foregoing pages for fields of the Oklahoma City Pool type; i.e., where gas pressure is the predominant force for moving the oil, at least in the flush stages, offers these distinct advantages:

1. It protects the equities of the individual properties by restricting drainage substantially within the property lines.

2. It is predicated upon two definite and easily obtainable and provable facts, viz., legal oil runs and bottom hole pressures.

3. It provides automatic means for detecting and correcting errors or abuses and therefore requires a minimum of enforcement supervision and should be relatively economical in cost of application.

It has been necessary to assume certain legal points and should different interpretations be made, corresponding modifications can be made. The specific plan considers equities only but in a subsequent article the writers will discuss the relation of the plan to conservation.

Gulf Coast Fields and Wildcats

(Continued from Page 54)

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 17 Mayes, F. H. R. Wallis Sur., 400 ft. NE of No. 14 ..... Coring hard sandy lime 2,812 ft.

RABBS RIDGE—FORT BEND COUNTY

Cullen & West's No. 1 Whitemore, Samuel Kennedy Sur., 231 ft. W of E line, 467 ft. N of S line of lease .. No report.

Gulf Prod. Co.'s No. 4 Jack Gubbels, Samuel Kennedy Sur., 1,758 ft. along E line from SE cor. and 2,-271 ft. W at right angles ..... Sand 5,300 ft; cmtd. 7-in. csg.

Humble O. & R. Co.'s No. 6 Mary Gubbels, Samuel Kennedy Sur., 516 ft. from N line, 497 ft. from W line of tract ..... Comp. 54 bbls. per hr.; ¾-in. choke, 5,300 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 6 T. R. Booth, 6,152 ft. E along N line of John Rabb Sur., from NW cor. of E½ and 2,454 ft. S at right angles .. T.D. 5,300 ft; cmtd. 7-in. csg.

Humble O. & R. Co.'s No. 5 Mary Gubbels, Samuel Kennedy Sur., 1,469 ft. from S line, 532 ft. from E line of lease ..... Spudded.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 7 George, J. Rabb Sur. ..... Comp. 61 bbls. per hr.; ¾-in. choke, 5,300 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 8 Lockwood, J. Rabb Sur. ..... Drlg. shale 4,875 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 9 Lockwood, J. Rabb Sur., 6,286.5 ft. from W line, 311.6 ft. from N line of tract ..... Drlg. shale 3,920 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 11 H. F. Lockwood, J. Rabb Sur., 9,080 ft. from W line, 311 ft. from N line of lease ..... Cmtd. surface csg. 1,173 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 15-A Lockwood & Sharp, John Rabb Sur., 933 ft. E of No. 15-A ..... Comp. 47 bbls. per hr.; ¾-in. choke, 5,300 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 12 H. P. Lockwood, John Rabb Sur., 7,085 ft. from W line, 300 ft. from S line of lease ..... Drlg. shale 1,011 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 14-A Lockwood & Sharp, J. Rabb Sur., 4,173 ft. from W line, 526 ft. from S line of lease ..... Drlg. gumbo 1,695 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 17-A Lockwood & Sharp, John R. Rabb Sur., 833 ft. E of No. 16 ..... Rig.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 35 Moore, Mark Smith Sur. ..... Plugged to 2,692 ft.

SUGARLAND—FORT BEND COUNTY

Keimm Prod. Co.'s No. 1 Peterson, Wm. Littel Sur., 100 ft. SE, 100 ft. SW of NE cor. of tract ..... Set 73 ft. of screen 3,756 ft; swbd. but failed to flow; waiting on tubing.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 3 Broussard, M. Dunman Sur., 150 ft. E of center of W line of tract ..... D.S. stuck 6,152 ft.

Yount Lee Oil Co.'s No. 34 Cade, N. Fitzsimmons Sur., 856 ft. S of No. 33 ..... Drlg. shale 5,844 ft.

Yount Lee Oil Co.'s No. 35 Cade, N. Fitzsimmons Sur., 600 ft. S of No. 34 ..... Drlg. gumbo 1,955 ft.

Yount Lee Oil Co.'s No 15 Smith, Martin Dunman Sur., 1,622 ft. from NW line, 315 ft. from SW line ..... Drlg. shale 2,710 ft.

Yount Lee Oil Co.'s No. 16 Smith, Martin Dunman Sur., 300 ft. SE of No. 12 and parallel to land line ..... Drlg. gumbo 1,131 ft.

ARIOLA—HARDIN COUNTY

Republic Prod. Co.'s No. 2 Ariola fee, Ariola Sur., 400 ft. S of No. 1 ..... No report.

BATSON—HARDIN COUNTY

Danciger O. & R. Co.'s No. 1 Hooks, 95 ft. S, 150 ft. W of NE cor. of Strip 13, Donoghue Sur. ..... No report.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 94, Jordit, Jordit Sur., 200 ft. N of No. 90 ..... Set 38 ft. of 8¼-in. screen 680 ft; comp. pumping well.

Rio Bravo Oil Co.'s No. 95 Jordit, Jordit Sur. ..... Rigging up.

Rio Bravo Oil Co.'s No. 14-A Settegast (D.D.), J. Kopman Sur. ..... Drlg. sandy shale 5,406 ft.

MYKAWA—HARRIS COUNTY

Crown-Framer Oil Co.'s No. 4 Minnetex, 165 ft. S, 120 ft. W of NE cor. of Blk. 193, Wm. Lovett Sur. .... Set 48 ft. of 7-in. screen 4,913 ft. with 2½-in. tubing to top; comp. flowing 100 bbls. daily by heads.

PIERCE JUNCTION—HARRIS COUNTY

Rio Bravo Oil Co.'s No. 26-A Settegast, J. Kopman Sur., 1,310 ft. from N line, 760 ft. from E line of "A" lease ..... T.D. 5,928 ft; plugged to 5,843 ft; set 45¾ ft. of 4½-in. screen; swbd. S.W.; standing.

Rock Drlg. Co.'s No. 1 Herman Est., J. Kopman Sur. No. 44, 788 ft. from E line, 33 ft. from N line of tract ..... Sandy shale 3,400 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Co.'s No. 10 Moore's Bluff, M. Duncan Sur., 1,500 ft. from E line, 2,100 ft. from N line of 632-ac. tract ..... T.D. 7,077 ft; flowed 1,000 bbls., ¾-in. choke in 24 hrs.; sanded up.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 1 Crowe & Jacobs, H.&T.C. Sur., Sec. 21, 900 ft. from W line, 1,700 ft. from S line of N 320 ac. of section ..... Rigging up.

HULL—LIBERTY COUNTY

Aberoil Oil Co.'s No. 1 Barrow, Jesse Devore Sur., 64 ft. from N line, 700 ft. from E line of 10-ac. tract.. D.S. stuck 6,452 ft.

Houston Prod. Co.'s No. 2 Baldwin, Jesse Devore Sur., 50 ft. from S line, 50 ft. from E line of lease ..... Sand showing oil 5,200-53 ft.; cmtd. 8⅝-in. csg. at 5,200 ft.

Jack Mediasitte's No. 1 Taylor, Jesse Devore Sur. ..... Drlg. 1,225 ft.

Unique Oil Co.'s No. 1 Knox-Nelson-Layton, Jesse Devore Sur., 30 ft. from N line and midway E and W of ½-ac. tract ..... Drlg. shale 5,625 ft.

CONROE—MONTGOMERY COUNTY

Alpha Oil Co.'s No. 3 Keystone Mills, Lemuel Smith Sur., 1,492 ft. from S line, 466 ft. from W line of tract ..... T.D. 5,091 ft; comp. 60 bbls. per hr.; ½-in. choke.

Alpha Oil Co.'s No. 3-A Krohn, S. H. Bryan Sur., 791 ft. N of No. 2-A ..... Sand 5,114 ft; cmtd. 7-in. csg. 5,035 ft.

Alpha Pet. Co.'s No. 1 South Tex. Dev. Co., F. R. Henderson Sur., 466 ft. out of NE cor. ..... Abd. location; moved off derrick and rig.

Alpha Oil Co.'s No. 2-C South Tex. Dev. Co., T.&N.O. Sur. No. 13 ..... Drlg. shale 5,010 ft.

Amerada Pet. Corp.'s No. 4 South Tex. Dev. Co., C. A. West Sur., 466 ft. from E line, 230 ft. from S line of lease ..... Comp. flowing 92 bbls. per hr.; ½-in. choke, 5,120 ft.

A. & P. Prod. Co.'s No. 1 Keystone Mills, A. Steele Sur., 466 ft. from N line of 40-ac. lease in center, E and W ..... Sand 5,018 ft; cmtd. 7-in. csg. 5,060 ft.

A. & P. Prod. Co.'s No. 2 Keystone Mills, A. Steele Sur., 466 ft. from S line of 40-ac. lease in center E and W ..... Derrick.

Bishop Oil Co.'s No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 574 ft. from N line, 379 ft. from W line of 20-ac. tract ..... Coring hard sand 5,030 ft.

Butler & Horne's No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 250 ft. from W line, 234 ft. from S line of lease ..... Drlg. shale 1,295 ft.

Feltex Oil Co.'s No. 2 Kirby-Bertrand, Wagers Sur., 1,267 ft. S of No. 1, in center of tract E and W .. Rig.

Giesecke & Craft's No. 1 Granger, T.&N.O. Sur. No. 14, 467 ft. out of NW cor. of 77-ac. lease ..... Spudded.

Gulf Coast Drlg. & Prod. Co.'s No. 1 Bertrand, G. W. Wagers Sur., 466 ft. out of NE cor. of lease ..... Rig.

Gulf Coast Drlg. & Prod. Co.'s No. 1 E. E. Hensley, A. Steele Sur., 486 ft. from W line, 466 ft. from S line of 44 acres ..... Derrick.

Gulf Coast Drlg. & Prod. Co.'s No. 2 E. E. Hensley, A. Steele Sur., 466 ft. from N line, 486 ft. from W line of tract ..... Clearing location.

Gulf Coast Drlg. & Prod. Co.'s No. 3-B Keystone Mills, A. Steele Sur. ..... Drlg. shale 1,345 ft.

Gulf Coast Drlg. & Prod. Co.'s No. 7 Keystone Mills, 466 ft. from N and W lines of A. S. James Sur. ... T.D. 5,070 ft; drlg. 7-in. plug 5,029 ft.

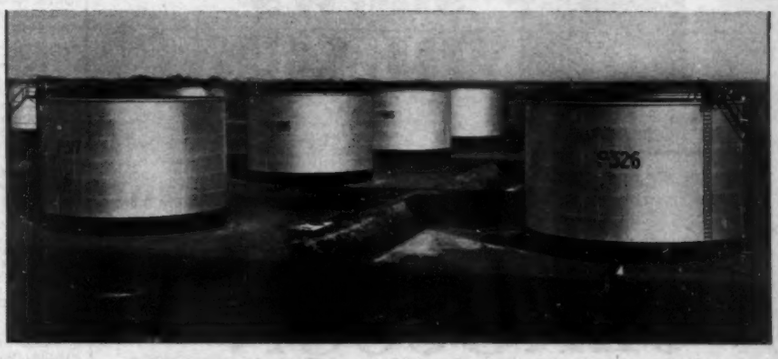
Hamill & Smith's No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 12, 341 ft. from W line in center, N and S of 10-ac. tract ..... Derrick.

Harrison & Abercrombie's No. 2 Arthur Wiggins, T. M. Wiggins Sur., 300 ft. from W line, 466 ft. from S line of lease ..... Rig.

Harrison & Abercrombie's No. 2 Ben Wiggins, T. M. Wiggins Sur., 466 ft. from N line, 1,300 ft. from E line of lease ..... Comp. 40 bbls. per hr.; ½-in. choke, 5,130 ft.

Harrison & Abercrombie's No. 3 Ben Wiggins, T. M. Wiggins Sur., 1,431 ft. from N line of survey, 260 ft. from E line of lease ..... T.D. 5,159 ft; plugged to 4,450 ft; drlg. sidetracked hole 4,725 ft.

The GRAVITY of the oil calls for WIGGINS ROOFS



EVAPORATION robs crude oil and refined products of the lightest and most valuable fractions. Stocks stored in ordinary tanks lose not only in volume but also in gravity.

The current demand for "high test" and "super" fuels places an increasing pressure on oil companies to protect their products in storage against the inroads of evaporation.

This protection is available in a practical form which quickly pays for its own cost through the savings effected. Wiggins Roofs have been demonstrating their success for a decade. They are found in all oil fields and refining and marketing centers. Scores of big oil companies have installed them in large numbers as a result of previous experience.

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PHILADELPHIA.....1615-1700 Walnut St. Bldg.
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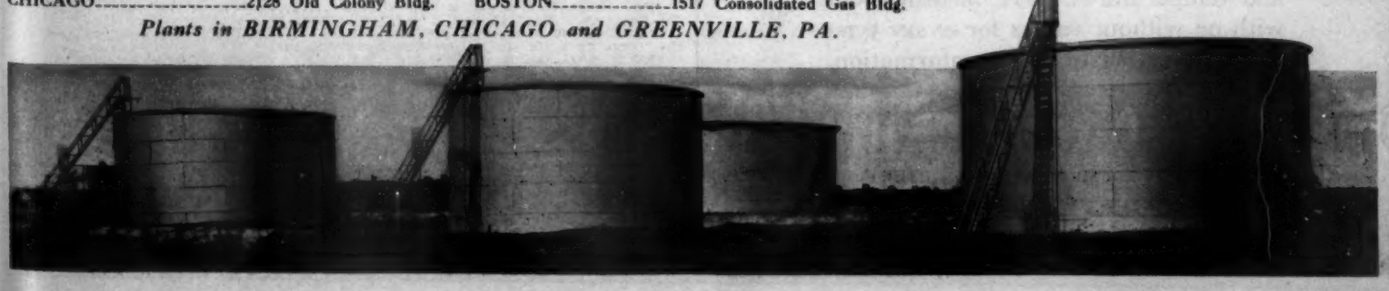
Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.



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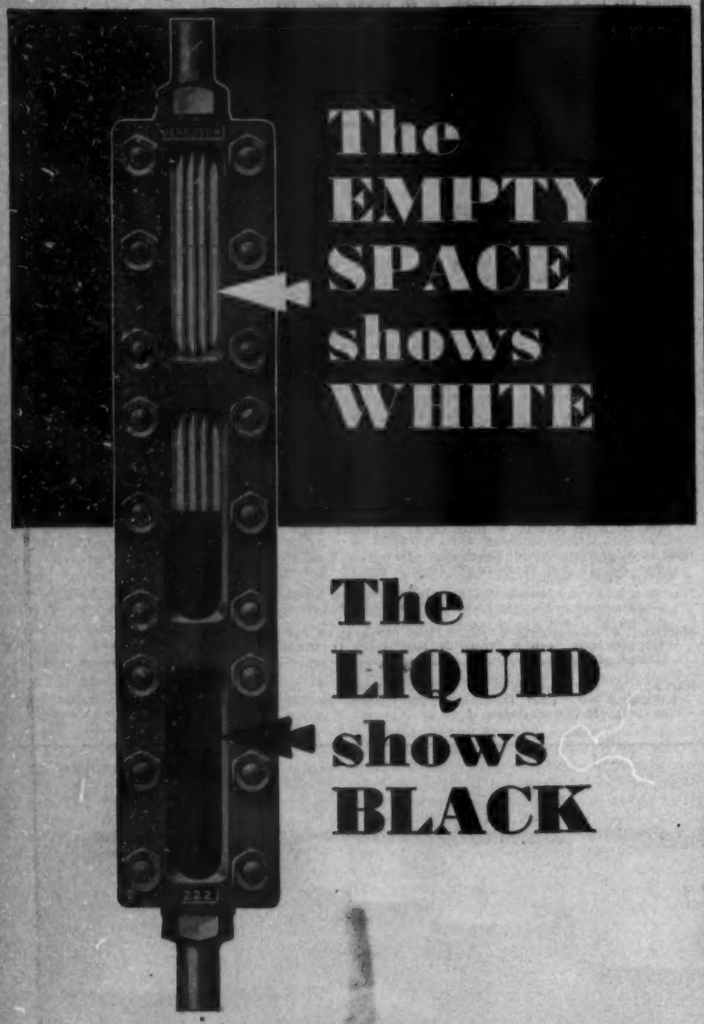

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SOMERVILLE, MASS.

Harrison & Abercrombie's No. 2 Massey, T.&N.O. Sur. No. 16, 1,385 ft. from N line, 466 ft. from W line	Sand 5,031 ft; cmtd. 7-in. csg.
Hi-Grade Oil Co.'s No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 380 ft. from N line, 207 ft. from W line of lease	Rig.
L. L. Horne Oil Co.'s No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 5	Cmtd. 10-in. csg. 968 ft.
Houston Oil Co.-Tide Water Oil Co.'s No. 3 Dobbins, Ransom House Sur., 425 ft. from N line, 1,502 ft. from W line	Rig.
Houston Oil Co.-Tide Water Oil Co.'s No. 5 Dobbins, Ransom House Sur., 425 ft. from N line, 466 ft. from E line	Rig.
Houston Oil Co.-Tide Water Oil Co.'s No. 4 Cartwright, John Davis Sur., 833 ft. from E line, 799 ft. from N line of lease	Comp. 20 bbls. per hr.; ½-in. choke, 5,170 ft.
Houston Oil Co.-Tide Water Oil Co.'s No. 2 Moore, Lemuel Smith Sur., 250 ft. from N line, 454 ft. from W line of the 100-ac. lease	Derrick.
Humble O. & R. Co.'s No. 2-B Cartwright, John Davis Sur., 466 ft. out of SW cor. of "D" lease	Comp. 100 bbls. per hr.; ½-in. choke, 5,184 ft.
Humble O. & R. Co.'s No. 2 B. E. Jones (21 acres), 466 ft. from N line and 2,206 ft. from E line of Lemuel Smith	Comp. 102 bbls. per hr.; ½-in. choke, 5,131 ft.
Humble O. & R. Co.'s No. 3 B. E. Jones, Lemuel Smith Sur., 500 ft. from E line, 375 ft. from S line	Drlg. lime 4,790 ft.
Humble O. & R. Co.'s No. 33 Madeley, Ransom House Sur., 1,044 ft. E of No. 32	Drlg. shale 3,825 ft.
Humble O. & R. Co.'s No. 35 Madeley, Ransom House Sur., 425 ft. from S line, 266 ft. from W line	Drlg. sand 160 ft.
Humble O. & R. Co.'s No. 24 Moore, Lemuel Smith Sur., S offset Tide Water Oil Co.'s No. 1 Eichletz	Sand 5,062 ft; cmtd. 7-in. csg. 5,030 ft.
Humble O. & R. Co.'s No. 25 Moore, Lemuel Smith Sur., 650 ft. from N line, 466 ft. from W line of tract	Sand 5,045 ft; cmtd. 7-in. csg. 5,020 ft.
Humble O. & R. Co.'s No. 32 Moore, Lemuel Smith Sur., 600 ft. from NW line, 466 ft. from NE line of lease	Drlg. shale 1,326 ft.
Humble O. & R. Co.'s No. 4 Pisoffilis, 458 ft. S of No. 3, W. M. Real Sur.	Sand 5,030 ft; cmtd. 7-in. csg.
Humble O. & R. Co.'s No. 2 L. B. Rooker, M. W. Real Sur., 450 ft. N of No. 3	Drlg. shale 4,370 ft.
Humble O. & R. Co.'s No. 5 L. B. Rooker, M. W. Real Sur., 400 ft. N of No. 3	Drlg. shale 1,265 ft.
Humble O. & R. Co.'s No. 6 L. B. Rooker, 1,431 ft. from N line, 225 ft. from W line of J. M. Real Sur.	Drlg. shale 1,282 ft.
Humble O. & R. Co.'s No. 32 South Tex. Dev. Co., 1,300 ft. from S line, 4,800 ft. from E line of Theo. Slade Sur.	Drlg. shale 1,996 ft.
Humble O. & R. Co.'s No. 35 South Tex. Dev. Co., Theo. Slade Sur., 1,095 ft. NE of No. 34	Drlg. shale 1,711 ft.
Humble O. & R. Co.'s No. 45 South Tex. Dev. Co., Theo. Slade Sur., 664 ft. NE of No. 46	Drlg. shale 4,599 ft.
Humble O. & R. Co.'s No. 1 R. Wiggins, T. M. Wiggins Sur., center of tract	Comp. 39 bbls. per hr.; ½-in. choke, 5,141 ft.
Humble O. & R. Co.'s No. 2 Wiggins & Athey, T. M. Wiggins Sur., 660 ft. from S line, 300 ft. from E line of 26.6-ac. lease	Coring shale 5,127 ft.
W. M. Massey's No. 2 Fannie Hooper, 1,930 ft. from N line, 635 ft. from W line of Fannie Hooper (De-Moss) Sur.	T.D. 5,080 ft; cmtd. 7-in. csg. 5,040 ft.
McAlbert Oil Co.'s No. 2 Keystone Mills, 433 ft. from S line, 434 ft. from W line of A. Steele Sur.	Comp. 35 bbls. per hr.; ½-in. choke, 5,095 ft.
Navarro Oil Co.'s No. 1 Myers, C. A. West Sur.	Set screen 5,140 ft; washing.
Neuhaus & Horn's No. 1 South Tex. Dev. Co., center of L. L. Horn 16.81-ac. tract in T.&N.O. Sur. No. 5	T.D. 5,122 ft; cmtd. 7-in. csg. 5,030 ft.
Neversuch Oil Co.'s No. 3 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 933 ft. N of No. 2 in center of lease N and S	Drlg. shale 4,315 ft.
North Star Oil Co.'s No. 1 Granger, 1,400 ft. from E line, 2,600 ft. from N line of T.&N.O. Sur. No. 14	T.D. 190 ft; rebuilding derrick.
Republic Prod. Co.'s No. 1 B. D. Griffin, Wilson Strickland Sur., 233 ft. from E line, 466 ft. from N line of lease	T.D. 5,018 ft; cmtd. 7-in. csg. 5,005 ft.
Showers & Moncrief's No. 3 Dunn, Wilson Strickland Sur., 900 ft. S of No. 1	Sand 4,992-5,108 ft; comp. well; no gauge.
South Gulf Oil Corp.'s No. 2 Granger, T.&N.O. Sur. No. 14, 933 ft. E of No. 1 and 467 ft. from S line	Cmtd. surface pipe.
Southern Liberty Oil Co.'s No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 8, 350 ft. out of NW cor. of 18.675-ac. tract	Coring sticky shale 5,015 ft.
Southern Liberty Oil Co.'s No. 1-B South Tex. Dev. Co., 330 ft. from N line, 2,600 ft. from E line of T.&N.O. Sur. No. 5	Cmtd. 12½-in. csg. 150 ft.
Standard Oil Co. of Kans.' No. 2-A Madeley, Ransom House Sur., 1,374 ft. from N line, 695 ft. from E line of survey	Drlg. sandy shale 2,881 ft.
Strake Pet., Inc.'s No. 1 K. G. Shaffer, C. B. Stewart Sur., 555 ft. from E line, 1,400 ft. from S line of lease	Drlg. approx. 5,020 ft.
Sun Oil Co.'s No. 1 Jones, Sitton Sur., 466 ft. out of NW cor. of tract	Drlg. sandy shale 3,052 ft.
Sun Oil Co.'s No. 2 Foster, John Bricker Sur., 933 ft. SW of No. 1	Drlg. shale and lime 3,510 ft.
Sun Oil Co.'s No. 1 South Tex. Dev. Co., T.&N.O. Sur., No. 5, 467 ft. from S line in center E and W of 50-ac. tract	T.D. 5,131 ft; swabbing.
Sun Oil Co.'s No. 2 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 943 ft. N of No. 1 in center of lease E and W	Sand 5,157-68 ft; cmtd. 7-in. csg. 4,986 ft.
Sun Oil Co.'s No. 3 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 933 ft. N of No. 2 in center of lease E and W	Derrick.
Sun Oil Co.'s No. 4 South Tex. Dev. Co., T.&N.O. Sur. No. 4, 933 ft. N of No. 3 in center of lease E and W	Moving in.
Sun Oil Co.'s No. 2 Jones, Wilson Strickland Sur., 466 ft. from N and E lines of lease	Drlg. shale 3,625 ft.
Sun Oil Co.'s No. 2 Stewart, J. M. Real Sur., 1,350 ft. from E line, 1,400 ft. from S line of lease	Coring sand and shale 4,885 ft.
Sun Oil Co.'s No. 3 Stewart, J. M. Real Sur., 1,040 ft. from E line, 700 ft. from N line of lease	Coring sand and shale 5,128 ft.
Texas Unity Oil Co.'s No. 1 Keystone Mills, L. Smith Sur., 466 ft. from S and E lines of lease	Rig.
The Texas Co.'s No. 5 Dudley, C. B. Stewart Sur., 1,188 ft. E, 900 ft. S out of NW cor. of lease	Drlg. gumbo and lime 2,860 ft.
The Texas Co.'s No. 12 Moody, Ransom House Sur., 933 ft. S, 15 deg. E of No. 8	Drlg. sticky shale 3,258 ft.
The Texas Co.'s No. 22 Moody, Ransom House Sur., 350 ft. from most westerly west cor. and 466 ft. from most southerly N line	Cmtd. 10¾-in. csg. 1,287 ft.
The Texas Co.'s No. 15 Moody, Ransom House Sur., 966 ft. N of No. 14	Cmtd. 7-in. csg. 5,039 ft.
The Texas Co.'s No. 20 Moody, 2,200 ft. E along S line of Wilson Strickland Subd. from SW cor. and 466 ft. S at right angles	Drlg. shale 4,751 ft.
The Texas Co.'s No. 7 Rhodes, 1,210 ft. from E line of lease and 330 ft. S of S line of C. A. West Sur. in W. S. Rhodes Sur.	Cmtd. 7-in. csg. 5,003 ft.
The Texas Co.'s No. 13 Rhodes, W. S. Rhodes Sur., 1,236 ft. from W line, 400 ft. from S line	Comp. 66 bbls. per hr.; ½-in. choke, 5,115 ft.
The Texas Co.'s No. 12 Rhodes, 1,450 ft. from S line, 1,300 ft. from E line of lease, W. S. Rhodes Sur.	Drlg. gumbo 1,235 ft.

The Texas Co.'s No. 14 Rhodes, W. S. Rhodes Sur., 1,060 ft. from W line, 1,470 ft. from S line ..... Killed blowout; standing 5,010 ft.
Tide Water Oil Co.-Strake's No. 4 Dean, W. C. C. Lynch Sur., 467 ft. from S and E lines of lease .... T.D. 5,023 ft; cmtd. 7-in. csg. 4,995 ft.
Tide Water Oil Co.'s No. 6 Dean, W. C. C. Lynch Sur., 1,398 ft. from E line, 467 ft. from S line of lease.... T.D. 5,055 ft; cmtd. 7-in. csg. 5,015 ft.
Tide Water Oil Co.'s No. 2 J. R. Eichlets, Lemuel Smith Sur., 2,147 ft. from E line and 226 ft. from S line of 100-ac. tract ..... Comp. 154 bbls. per hr.; ½-in. choke, 5,068 ft.
Tide Water Oil Co.'s No. 1 Eichlets, Lemuel Smith Sur., 467 ft. from N line, 1,010 ft. from E line of lease ..... Derrick.
Tide Water Oil Co.'s No. 2 Granger, T.&N.O. Sur. No. 14, 1,096 ft. from N line, 338 ft. from W line ..... Bldg. derrick.
Tide Water Oil Co.'s No. 3 Krohn, S. H. Bryan Sur., 466 ft. from N line, 467 ft. from W line of tract.... Bldg. derrick.
Tide Water Oil Co.'s No. 18 Lewis, C. B. Stewart Sur., 396 ft. from S line, 1,168 ft. from E line of tract .. Comp. 100 bbls. per hr.; ½-in. choke 5,128 ft.
Tide Water Oil Co.'s No. 19 Lewis, C. B. Stewart Sur., 396 ft. from S line, 2,180 ft. from E line of lease ... Drlg. sticky shale and lime 4,870 ft.
Tide Water Oil Co.'s No. 20 Lewis, 1,493 ft. from S line, 467 ft. from E line of lease ..... T.D. 5,051 ft; running 7-in. csg.
Tide Water Oil Co.'s No. 5 South Tex. Dev. Co., T.&N. O. Sur. No. 5, 1,459 ft. from W line, 467 ft. from N line of lease ..... Derrick.
Tide Water Oil Co.-Republic Prod. Co.'s No. 6 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 2,379 ft. from S line, 330 ft. from E line ..... Comp. 74 bbls. per hr.; ½-in. choke, 5,113 ft.
Tide Water Oil Co.'s No. 7 South Tex. Dev. Co., T.&N. O. Sur. No. 5, 3,173 ft. from S line, 330 ft. from E line ..... Comp. 92 bbls. per hr.; ½-in. 5,104 ft.

REFUGIO—REFUGIO COUNTY

Traylor Prod. Co.'s No. 2 Kay, 300 ft. N of center of S line of Refugio Town tract ..... No report.
United Prod. Corp.'s No. 1-A M. F. Lambert, 666 ft. from N line, 822 ft. from W line of Hewa & Brown Sur. ..... No report.

PORT NECHES—ORANGE COUNTY

The Texas Co.'s No. 3 Kuhn (W.O.), Mary E. Hall Sur., No. 2, 587 ft. S, 150 ft. W of NE cor. of survey..... Drlg. shale and lime 4,318 ft.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 7 Clay, J. F. Perry Sur., 200 ft. from S line of lease and 50 ft. NW of No. 6 ..... T.D. 1,323 ft; cmtd. 7-in. csg. 1,320 ft.

SOUTH LOUISIANA FIELDS

DARROW—ASCENSION PARISH

Rio Bravo Oil Co.'s No. 2 Community, Sec. 31-10s-2e, 1,780 ft. S, 600 ft. W of No. 1 ..... Set 81 ft. of 7-in. screen 4,827 ft; failed to flow; rigging up to pump.
Rio Bravo Oil Co.'s No. 1 Gumbel, 4,000 ft. W, 250 ft. S of NE cor. of S. Gumbel & Co. tract, Sec. 32-10s-2e.. Coring sand and shale 5,824 ft.

SORRENTO—ASCENSION PARISH

Union Sulphur Co.'s No. 24 United Land Co., Sec. 14-10s-4e, 2,500 ft. E of No. 6 ..... Drlg. gumbo 1,420 ft.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Magnolia Pet. Co.'s No. 3 Waite, 330 ft. out of NE cor. SE Sec. 13-9s-7w ..... T.D. 6,975 ft; comp. flowing 575 bbls. daily; ¼-in. choke, 1,350 lbs.
Shell Pet. Corp.'s No. 3 Heyd, 385 ft. N, 330 ft. W of SE cor. NE Sec. 13-9s-7w ..... Set 1 joint screen 5,539 ft; flowed 170 bbls. in 18 hrs.; 18/64-in. choke.
Shell Pet. Corp.'s No. 1 Stafford, 335 ft. S, 225 ft. E of NW cor. Sec. 15-9s-4w ..... Coring sand showing oil 6,936 ft.

PORT BARRE—ST. LANDRY PARISH

Gulf Ref. Co.'s No. 3 Wilson & Cochran, Sec. 4-8s-5e .. Rig.
Gulf Ref. Co.'s No. 4 Wilson & Cochran, Sec. 4-8s-5e, direct offset The Texas Co.'s No. 14 Botney Bay.... Comp. flowing 1,400 bbls. oil, ¼-in. choke, 3,328 ft.

VINTON—CALCASIEU PARISH

Marrs McLean's No. 15 Gray, Sec. 33-10s-12w ..... Cmtd. 10-in. csg. 735 ft.

STARKS—CALCASIEU PARISH

Union Sulphur Co.'s No. 1 Lutcher-Moore, 1,200 ft. W, 1,010 ft. N of SE cor. Sec. 10-9s-13w ..... Salt 2,015-3,055 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 777 fee, 753 ft. E and 756 ft. N of center Sec. 29-9s-10w ..... Drlg. sandy shale 4,410 ft.
Union Sulphur Co.'s No. 778 fee, 362 ft. N, 1,795 ft. W of center Sec. 29-9s-10w ..... Drlg. shale 4,250 ft.

GUBYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 3 Mulvey, Sec. 34-11s-1w, 1,515 ft. from N line, 1,150 ft. from E line of tract ..... Set 31 ft. of 7-in. screen 4,350 ft; lost swab in hole; flowing 216 bbls. daily, wash wtr. and oil (86. bbls. net oil).
Pure Oil Co.'s No. 3 Mulvey, 600 ft. S, 2,389 ft. E of NW cor. Sec. 34-11s-1w ..... Coring sandy shale 4,053 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 2 Hanzer, Sec. 14-12s-10w, 400 ft. W, 300 ft. S of No. 1 ..... Derrick.
East Hackberry Oil Co.'s No. 1 Landry, 2,957 ft. E, 156 ft. S of SW cor. Sec. 13-12s-10w, in Sec. 36..... Drlg. 1,815 ft.
Massert & Cruse's No. 1 J. B. Duhon, 656 ft. S, 325 ft. E of NW cor. Sec. 26-12s-10w ..... No report.
The Texas Co.'s No. 10-B State, 1,000 ft. E, 300 ft. N of NE cor. Sec. 13-12s-10w ..... Drlg. 6,505 ft.
Union Sulphur Co.'s No. 5 Gulf Land-Humble lease, Sec. 11-12s-10w, 300 ft. N of No. 1 ..... Drlg. shale 5,630 ft.

CHOCTAW—IBERVILLE PARISH

Standard Oil Co.'s No. 4 Myrtle Grove, 2,350 ft. S, 150 ft. W of NE cor. NW Sec. 52-8s-11e ..... Spudded.

CAMERON MEADOWS—CAMERON PARISH

Magnolia Pet. Co.'s No. 3 Cameron Meadows, 2,620 ft. S, 1,900 ft. W of NE cor. Sec. 21-14s-13w..... Salt 6,179-6,450 ft; drill pipe stuck; standing.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 11 Yount Lee, Sec. 12-12s-8w, 800 ft. S 66 deg. 42 min. from No. 9 ..... Drlg. sandy shale 5,157 ft.

TEXAS

MISCELLANEOUS WILDCATS

AUSTIN COUNTY

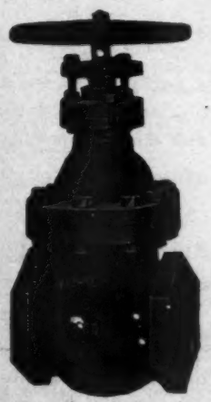
Cranfill-Reynolds Co.'s No. 1 J. B. Lewis, 3,150 ft. from N line, 330 ft. from W line of J. C. Hacienda Sur.... Dry and abd. 4,514 ft.

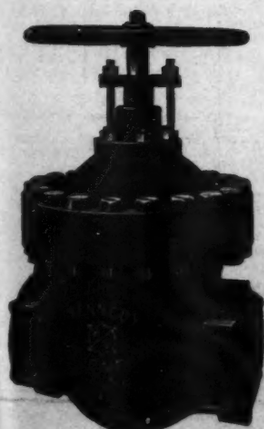
BRAZORIA COUNTY

Amerada Pet. Corp. and Rycade Oil Corp.'s No. 3 Seaburn, 1,250 ft. E of W line and 4,550 ft. S of N line of Austin & Williams Sur. ..... Drill pipe stuck 4,200 ft.
Currie Oil Co.'s No. 2 Tolar & Dannenbaum, Williams & Austin Sur., 1,600 ft. SW of Freeport Sulphur Co.'s No. 5 ..... S.D. 1,103 ft.
Danciger O. & R. Co.'s No. 2 Hunt, Pledger, 5,550 ft. from E line, 5,550 ft. from S line of W. Carson Sur.. Drlg. gumbo and lime 3,512 ft.
Tri-fin Oil Co.'s No. 1 Moers, 1,635 ft. SW of Chocolate Bayou, 692 ft. SE of NW line of F. Moore Sur. ..... Drlg. hard shale 4,815 ft.

BRAZOS COUNTY

Adkins & O'Neill's No. 1 Clay, 1,150 ft. E, 5,750 ft. N of SW cor. of Walter Southerland Sur. ..... Shale 3,534 ft; S.D.; W.O.





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WHOLESALE AGENCIES AND STOCKS THROUGHOUT TEXAS, OKLAHOMA, ARKANSAS, LOUISIANA, AND NEW MEXICO.

COLORADO COUNTY

Danziger O. & G. Co. and L. E. Hulte' No. 1 C. L. Raver, B.B.B.&C. Sur., Sec. 1, 990 ft. out of SW cor. of 477-ac. tract — Cmtd. 12½-in. csg. 787 ft.

Fabrigus & Poole's No. 1 Lake Side Irrigation, 1,500 ft. SE, 500 ft. NE NW cor. Patrick Real Sur. — Spudded.

Humble O. & R. Co.'s No. 1 John McShane, L.&G.N. Sur., Sec. 42, 464 ft. out of NE cor of tract — T.D. 4,657 ft.; plugged to 3,600 ft.

Plymouth Oil Co.'s No. 1 Ream, 330 ft. out of NE cor. of L.&G.N. Sur. No. 47 — Drlg. sticky shale 4,250 ft.

FORT BEND COUNTY

Naylor & DeCosta's No. 1 Naylor, 6,350 ft. N, 55 deg. E from SW cor. 453-ac. tract in Christman Sur. — T.D. 7,014 ft.; P.B. to 5,600 ft.

HARRIS COUNTY

C. & C. Drlg. Co.'s (Weatherall) No. 1 Paden, 1,320 ft. from N line, 1,320 ft. from W line of Brock Sur. — Cmtd. 10-in. csg. 600 ft.

D.P.M. Corp.'s No. 1 Malcomson, A. Schouten Sur., 500 ft. from N line, 1,800 ft. from E line of 283-acre Daniels tract — Rig.

H. B. Jordan's No. 1 Cochran, J. L. Jordan Sur., 1,950 ft. from S line, 1,930 ft. from E line — Rigging up.

Magnolia Pet. Co.'s No. 1 Koba, 933 ft. from E line, 1,650 ft. from N line of lower J. M. Hooper Sur. — Drlg. sand and shale 280 ft.

Magnolia Pet. Co.'s No. 1 Martens, Joseph House Sur., 600 ft. from W line, 5,600 ft. from S line of tract — Drlg. shale 2,526 ft.

JACKSON COUNTY

The Texas Co.'s No. 1 Mitchell, S. F. Austin League, 450 ft. W, 450 ft. S of NE cor. of 63-ac. tract, Lot 28, Clement Subd. — Rigging up.

JASPER COUNTY

Smitherman, Neilson & Noble's No. 1 Cameron, Wm Jones Sur., 400 ft. S 45 deg. W of SW cor. of J. W. Allen 300-ac. tract — Shale 3,410 ft; preparing to resume operations.

JEFFERSON COUNTY

Carroll & Miller's No. 1 C. A. Mashman, W. B. Dyches Sur., 463 ft. W of highway and 105 ft. S of NE line of 13-ac. tract — S.D. 950 ft.

Coastal Oil Co.'s No. 1 Young, 250 ft. from E line, 160 ft. from S line of 40-ac. tract, in Blk. F-5, Lot 4, Joseph Grigsby Sur. — Drlg. shale 4,771 ft.

Elam & Denny's No. 2 Broussard, John McGaffey Sur., 150 ft. due E of No. 1 — Drlg. shale 3,378 ft.

LIBERTY COUNTY

Yount Lee Oil Co.'s No. 1 E. W. Boyt, H.&T.C. Sur., Sec. 17, 300 ft. from S line, 2,440 ft. from E line of section — Rigging up.

MATAGORDA COUNTY

Cockburn Oil Corp.'s No. 5 Hawkins, Shepherds Mott, 2,200 ft. SE, 1,300 ft. NE of W cor. Daniel McCarthy Sur. — T.D. 5,320 ft; plugged to 2,150 ft; milled out at 2,100 ft; drill pipe stuck; P.B. to 1,500 ft; trying to sidetrack.

Humble O. & R. Co.'s No. 2 Pierce est., 1,900 ft. NE, 466 ft. NW at right angles out of SW cor. of Pierce estate, same being NW cor. of W. S. and L. B. Hunt tract, W. Carson Sur. — Drlg. shale 1,426 ft.

United North & South Dev. Co.'s No. 1 Stoddard (W.O.), 150 ft. W, 545 ft. N of SE cor. of Blk. 58, Buckeye townsite — T.D. 7,926 ft; drlg. sidetracked hole 7,725 ft.

United North & South Dev. Co.'s No. 1 Unit 6 (No. 2 Stoddard), 25 ft. each way out of NW cor. of Lot 19, Buckeye Townsite — Fishing drill pipe 6,060 ft.

United North & South Dev. Co.'s No. 1 Unit 14 (No. 1 Dr. Plotner), 1,210 ft. SE of No. 1 Stoddard and 136 ft. W of right of way of Collegeport branch of St. L.&B.M.R.R., Buckeye — Drlg. gummy shale 4,617 ft.

MONTGOMERY COUNTY

A. H. Parsons et al's No. 2 Drought, Kronknite Sur., 3,660 ft. N, 100 ft. E of NW cor. of A. B. Hill 46¼ acres — S.D. in sand and shale 4,050-60 ft.

POLK COUNTY

Anderson et al's No. 1 Duke, Peter J. Manard Sur., 330 ft. out of NW cor. of 235-ac. tract — T.D. 4,730 ft; surface csg. collapsed.

Boone, Clark & Boone's No. 1 Tex. Long Leaf, 2,335 ft. NW along NE line of D. B. McComb Sur. from E cor. and 1,188 ft. SW at right angles — Rigging up.

Carlisle & Williams' No. 1 G. McDonald, A. Viesca Sur., Sec. 5, 150 ft. N, 330 ft. E of 110-ac. tract — Drlg. shale 3,432 ft.

Roxie Oil Co.'s No. 1 Reed, A. Viesca Sur., 150 ft. out of NW cor. of 479-ac. lease — Drlg. shale 3,024 ft.

Shell Pet. Corp.'s No. 1 Davis & Holmes, 330 ft. S and E out of NE cor. of J. A. Munson 80-ac. tract in Mary Sweeney (A. Viesca) Sur. — Coring sand 4,313 ft.

REFUGIO COUNTY

Geo. M. Smith's No. 1 J. M. O'Brien, 450 ft. W of center of E line of Winfield Sur. — No report.

Humble O. & R. Co.'s No. 4 O'Conner, Fiorentine Rice Sur., 933 ft. NW of No. 3 — Drlg. sandy shale 2,488 ft.

TRINITY COUNTY

L. G. Priest's No. 1 J. B. Gibson, Wm. Beardsley Sur., 900 ft. from N line, 200 ft. from E line of tract — S.D. 900 ft.

TYLER COUNTY

Republic Prod. Co. and Houston Oil Co.'s No. 1,014-E (No. 2 Sterne fee), Adolph Sterne Sur., 1,300 ft. S, 400 ft. W of No. 1 Sterne fee — Rigging up.

VICTORIA COUNTY

Gulf Prod. Co.'s No. 3 Keeran Ranch, Martin DeLeon Sur., 1,320 ft. NW of No. 1 — T.D. 7,465 ft; plugged to 5,705 ft; set 9 ft. of 4½-in. screen; comp. flowing 580 bbls. daily, 5/16-in. choke, 1,450 lbs.

Stoneleigh O. & G. Co.'s No. 1 Terrell, SW cor. of R. Manchola Sur. No. 2 — Tested S.W. in sand 3,083-90 ft.

The Texas Co.'s No. 7 McFaddin, 6,600 ft. S 15 deg. W, 450 ft. N 75 deg. W at right angles from the NE cor. of the A. J. Gray Sur. — Drlg. gumbo 1,151 ft.

WALLER COUNTY

Trapshooter Reilly Oil & Royalty Co.'s No. 1 Menke, Justo Liende Sur., 600 ft. at right angles from NW line at 250 ft. at right angles from E line of 330-ac. tract — T.D. 494 ft; cmtd. 12½-in. csg. 485 ft.

WASHINGTON COUNTY

Cline, Taylor et al's No. 1 Chadwick, Isaac Lee Sur., 560 ft. from N line, 1,000 ft. from E line of 320-ac. tract — Spudded.

WHARTON COUNTY

Pure Oil Co.'s No. 1 Stewart, 2,419 ft. NW, 1,460 ft. NE of S cor. of Sec. 25, Morris & Cummings Sur. — Drlg. sandy shale 5,752 ft.

Smith & Daniels' No. 1 Mitchell, H.&T.C. Sur. No. 8, 330 ft. from NE line of NE 85-ac. tract in center of tract NW and SE — Standing 6,875 ft.

SOUTH LOUISIANA

ALLEN PARISH

O'Brien Bros., Inc.'s No. 1 Long Bell, 430 ft. from W line, 330 ft. from N line of NW SW Sec. 34-4s-6w — Spudded.

BEAUREGARD PARISH

Herber & French's No. 1 Cochran, 400 ft. S, 850 ft. W of NE cor. Sec. 34-4s-5w — Rig.

CAMERON PARISH

Southern Sulphur Co.'s No. 1 Gulf of Mexico, 330 ft. S, 333 ft. E of SW cor. Sec. 19-15s-10w — Derrick.

JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 2 Devilbiss, 1,650 ft. S, 250 ft. W of NE cor. Sec. 14-9s-4w — S.D. for repairs 1,934 ft.

LA FOURCHE PARISH

Southern Sulphur Co.'s No. 1 State-Bay Marchand, 617 ft. E, 710 ft. S of SW cor. Sec. 20, in Sec. 29-23s-23e. Derrick.

PLAQUEMINES PARISH

Texas Gulf Sulphur Co.'s No. 1 LaFourche Levee district, 595 ft. from N line, 75 ft. from W line of Sec. 12-13s-25e ..... No report.

ST. BERNARD PARISH

Cook Drlg. Co.'s No. 1 Delecroix farm ..... Drlg. shale 6,200 ft.

Southern Sulphur Co.'s No. 1 State-Lake Borgne, 350 ft. N, 330 ft. E of SE cor. Sec. 33-13s-15e ..... Rig.

Southern Sulphur Co.'s No. 1 Lake Levy, 400 ft. S, 500 ft. N of SW cor. Sec. 28-13s-15e ..... Derrick.

TERREBONNE PARISH

The Texas Co.'s No. 8 State-Caillou Island, 1,050 ft. S, 2,770 ft. E of NW cor. Sec. 20-21s-20e ..... Driving piling.

The Texas Co.'s No. 3 State-Dog Lake, 4,947 ft. W, 1,877 ft. N of SE cor. Sec. 31-21s-16e ..... Preparing to build derrick.

The Texas Co.'s No. 12 State-Lake Barre, 1,876 ft. W, 551 ft. S of NW cor. Sec. 30, in Sec. 28-21s-20e .... Building derrick.

The Texas Co.'s No. 8 Lake Pelto-State, 928 ft. S and 628 ft. E of NW cor. of Sec. 9-23s-18e ..... Cap rock 3,878 ft; drill pipe stuck.

VERMILLION PARISH

Shell Pet. Corp.'s No. 1 Herbert, 2,310 ft. W, 330 ft. N of SE cor. Sec. 10-15s-1e ..... Reaming down rathole; T.D. 6,289 ft.

Wildcat Operations in Louisiana-Arkansas

(Continued from Page 53)

Carroll & Holden's (was Warren & Craig's) No. 1 J. A. Wagner, 150 ft. S and W from C, Sec. 5-12-14.... Sidetracking junk; T.D. 2,880 ft.

Mrs. A. L. Ibach, tr.'s No. 1 Rambin, 250 ft. S and E, NW cor. NE NE Sec. 32-11-11 ..... Coring shale and chalk 3,460 ft.

State Drlg. & Prod. Co.'s No. 1 Wemple, 330 ft. N and E, SW cor. NW SW Sec. 14-13-11 ..... S.D. shale 2,300 ft.

NATCHITOCHES PARISH

H. H. Temples' (was Natchitoches Pet. Co.'s) No. 1 Edenborn, 2,340 ft. W, 1,320 ft. S, NE cor. Sec. 4-11-8w ..... S.D.; W.O. 3,156 ft.

OUACHITA PARISH

Southern Carbon Co.'s No. 15 Fairbanks, 1,320 ft. N, 660 ft. W, SE cor. Sec. 5-19-4 ..... S.D.; W.O. 1,065 ft.

RAPIDES PARISH

Evers & Collingsworth's (was A. G. Beck et al's) No. 1 Hickman-Simmons Lbr. Co., 330 ft. S, 330 ft E, NW cor. Sec. 40-4-1e ..... Drlg. 1,050 ft.

RED RIVER PARISH

Edward & Clay's No. 1 Delta Pecan Co., 1,600 ft. N, 460 ft. E, SW cor. Sec. 27-13-11 ..... S.D. fuel 2,346 ft.

SABINE PARISH

R. T. Henderson's No. 1 Sistrunk, 450 ft. N, 150 ft. W, C, Sec. 9-9-12 ..... Swabbing small amount oil; T.D. 2,079 ft.

C. D. Loe, tr.'s No. 1 Whitney, 330 ft. N and W, SE cor. NW NE Sec. 19-9-14 ..... Base chalk 2,107 ft; S.D.; W.O. 2,205 ft.

CONVERSE DISTRICT

Cloud & Bolin's No. 1 Bowman-Hicks, SE cor. NE NE Sec. 26-9-13 ..... Cmtd. 6-in. 3,236 ft; T.D. 3,404 ft.

Lambert et al's No. 1 Edwards, 200 ft. S and E, NW cor. SW NW Sec. 29-9-13 ..... Arranging deepen; T.D. 1,971 ft.

H. C. Lessenger's No. 1 Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. Sec. 18-9-13 ..... Cmtd. 8-in. 1,612 ft.

Zwolle Prod. Co.'s (was Baird Bros.') No. 1 Tatum, SW NE Sec. 25-8-12 ..... C.O.; T.D. 2,338 ft.

TENSAS PARISH

H. V. Schumacker's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor. Sec. 39-11-13 ..... S.D. 3,725 ft.

Arkansas

LINCOLN COUNTY

Lawrence M. Cook, tr.'s No. 1 McGhee Planting Co., 420 ft. S, 220 ft. W, NE cor. NE SW ..... S.D. 4,248 ft; (C.D.).

LITTLE RIVER COUNTY

American Portland Cement Co.'s No. 1 fee, 150 ft. S and E, NW cor. SW NE Sec. 21-12-33 ..... Drlg. 2,175 ft.

MILLER COUNTY

J. T. Humphrey's No. 1 Grace, C SW SW Sec. 9-15-27... Cmtd. 10-in. 206 ft.

Roy Kniveton's (was Simon & Birdwell's) (was C. E. Starr's) No. 1 Barker, 330 ft. S, 150 ft. E, NW cor. NW SE Sec. 31-17-26 ..... Rebuilding derrick; T.D. 3,125 ft.

UNION COUNTY

Tom Nash's No. 1 Union Sawmill, 200 ft. N and E, SW cor. NW NE Sec. 19-18-11 ..... Drlg. 2,133 ft.

East Texas

CASS COUNTY

T. H. Pardoe, operator's No. 1 S. A. Orr, in the G. W. Morris Sur., 390 ft. east of the W line of the G. W. Morris Sur., also the east line of the David Frazier Sur. ..... Drlg. sandy shale 1,632 ft.

Louisiana-Arkansas Proven Areas

North Louisiana

CADDO—BLANCHARD AREA

Company, well, farm name, section and block— Remarks:

CADDO—BETHANY

Tom Collins Pet. Co.'s No. 1 Gill & Lipscomb, 660 ft. N, 1,506 ft. E, SW cor. Sec. 17-16-16 ..... Derrick.

CADDO—HOSSTON

Caddo Prairie O. & G. Co.'s No. 1 Hawkins, C SE SW Sec. 14-22-15 ..... S.D.; W.O. 1,826 ft.

Gibson Oil Corp.'s No. 1 J. H. Dominick, 330 ft. S and W, NE cor. SW NE Sec. 31-23-14 ..... Drlg. gummy shale 2,263 ft.

RHODESSA AREA

Pyramid O. & G. Co.'s No. 1 Shuttleworth, C SW NE Sec. 3-15-16 ..... Rigging up.

RED RIVER PARISH

W. W. Smith's No. 1 Wilkinson, 100 ft. S, 530 ft. W, NE cor. SW NW Sec. 3-12-10 ..... Rigging up.

SABINE PARISH—ZWOLLE

Byers et al's No. 1 Ervin & Bishop, 550 ft. E, 450 ft. N, SW cor. Sec. 16-7-11 ..... S.D. for D.S., 1,600 ft.

Doyle et al's No. 1 M. D. Russell, 330 ft. N and W, SE cor. NE SE Sec. 23-8-12 ..... Cmtd. 6-in. 2,310 ft.

Graham Prod. Co.'s No. 1 Lites, 330 ft. S and E, NW cor. SE SW Sec. 28-8-11 ..... T.A. 2,700 ft.

C. H. Lyons et al's No. 1 Stille, 330 ft. S and W, NE cor. SE Sec. 16-7-11 ..... Drlg. 1,460 ft.

Martin et al's No. 1 Porter, 330 ft. S, 330 ft. W, NE cor. NW SW Sec. 30-8-11 ..... S.D. fuel 390 ft.

H. C. Moulding's No. 1 Brumley, 330 ft. N, 330 ft. E, SW cor. NW NW Sec. 2-7-11 ..... Tested dry; W.O. 2,600 ft.

Ohio Oil Co.'s No. 1 A. C. Phillips, 330 ft. S and W, NE cor. SW SW Sec. 30-8-11 ..... Top marl 2,228 ft; cmtd. 6-in.; T.D. 2,330 ft.

Robertson Drlg. Co.'s No. 1 J. W. Hughes, 1,320 ft. W, C, Sec. 36-8-12 ..... Top marl 2,252 ft; S.D. for csg.

Scully & Beach's No. 3 Lafitte, 1,030 ft. S, 134 ft. E, NW cor. Sec. 13-7-11 ..... Hole clean; arranging to deepen; T.D. 2,492 ft.

H. B. Smith et al's No. 1 Middleton, 330 ft. N and W, SE cor. SE SE Sec. 26-8-12 ..... Cmtd. 6-in. top marl 2,340 ft.

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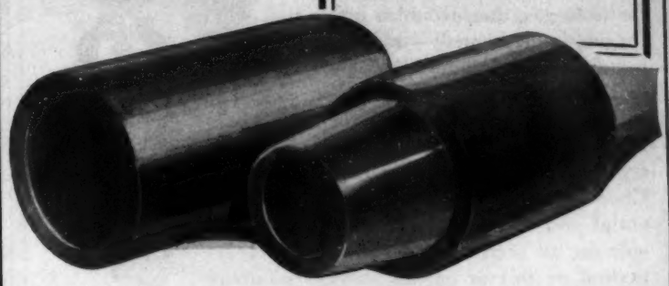

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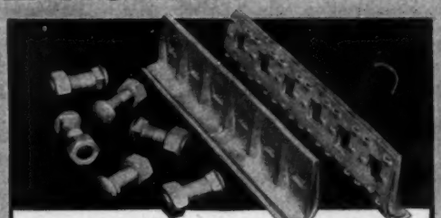

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Producers, Transporters, Refiners and Marketers of Petroleum and Its Products.

C. H. Tuttle's No. 4 Byrd, 880 ft. S, 920 ft. E, NW cor. NW NW Sec. 7-7-10 ..... Derrick.

Arkansas

UNION COUNTY—EL DORADO

F. C. Henderson's No. 1 J. F. Sample, 330 ft. S and W, NE cor. NW NW ..... D.S. test 2,520 ft; 4 joints mud; coring.

Wildcat Operations in Southwest Texas

(Continued from Page 55)

GUADALUPE COUNTY

Luling O. & G. Co.'s No. 1 Schueneman, 450 ft. from S line, 150 ft. from W line of 130-ac. tract in B. Fuqua Sur. ..... Spudded in.
Magnolia Pet. Co.'s No. 1 E. W. Williams, 200 ft. from N and E lines of 100-ac. tract in Green DeWitt Sur. ..... Rigging up.
Buckley Bros.' No. 1 M. T. Howell, 3,800 ft. S of road, 187 ft. from E line of tract in Jacob Darst Sur. ..... Moving in tools.

HIDALGO COUNTY

Carl & Johnston's No. 1 Doughty, 187 ft. from S and E lines of Lot 11, Blk. 5 of Subd. of Indios Ranch Sur. in N. Hidalgo ..... T.D. 1,027 ft; drlg.
Nat G. Martin's No. 1 Garcia Land & Cattle Co., 150 ft. N of cen. of Military Highway, 155 ft. from W line of Porcion No. 42, jurisdiction Reynosa ..... T.D. 1,010 ft; S.D.

JIM WELLS COUNTY

Magnolia Pet. Co.'s No. 2 A. A. Seeligson, 3,000 ft. from E line, 150 ft. from S line of V. Canales Sur. No. 218 ..... T.D. 3,253 ft; swbng.

JIM HOGG COUNTY

Cole Pet. Co.'s No. 1 E. Vela Hrs., 5,154 ft. from E line, 2,762 ft. from S line of Sur. 588 in El Peyote grant ..... T.D. 1,300 ft; drlg.
D. C. DeWitt's No. 1 A. G. Lopez, 3,475 ft. from W line, 425 ft. from N line of Sur. No. 108 ..... Spudded in.

KARNES COUNTY

W. R. Campbell's No. 1 E. C. Gillett, 2,594 ft. from SE line, 810 ft. from SW line of 391.5-ac. tract in C. Martinez Sur. ..... T.D. 2,350 ft; drlg.
Magnolia Pet. Co.'s No. 1 C. G. Porter, 250 ft. from W line, 1,650 ft. from S line of 1,362-ac. tract and survey in S. Morris Sur. ..... Rigging up.
The Texas Co.'s No. 1 Stewart, 500 ft. from NE line, 5,650 ft. from SE line of Asa Mitchell Sur. ..... T.D. 1,000 ft; drlg.

KERR COUNTY

J. E. Anderson's No. 1 J. D. Witt, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 1,923, in Hamilton Sur., 4 miles S of Center Point ..... T.D. 795 ft; drlg.

LIVE OAK COUNTY

Duval Oil Corp.'s No. 1 Border National Bank, 5 miles E of Jacob Pool ..... T.D. 864 ft; tested S.W.; drlg. ahead.
Jacob, Buzzini & Pickett's No. 1 O. M. Withers, 920 ft. to N line, 370 ft. to W line of Farm 10, McCowan ranch ..... Set surface csg.
Homer T. Lamb's No. 1 J. T. Brown, 150 ft. from N line, 2,450 ft. from W line of 692-ac. tract in M. Holy Sur. ..... T.D. 1,204 ft; in sand; to make D.S. test.
R. P. Whitfield's No. 1 Drummond, 650 ft. from S line, 1,440 ft. from E line of 200-ac. tract in John Carrington Sur. ..... T.D. 557 ft; drlg.

LEE COUNTY

Paton Bros.' No. 1-B Turner, 424 ft. from NW line, 375 ft. from NE line of 51.9-ac. tract in David Hudson Sur. ..... T.D. 1,100 ft; in sidetracked hole.
Sayre Oil Co.'s No. 1 Rister, 150 ft. from S and E lines of N 100-ac. Rister tract in J. V. Jamison Sur. ..... T.D. 3,128 ft; abd.

McMULLEN COUNTY

Jaqua & Crow's No. 1 Hagist, 330 ft. from N and W lines of R. W. Mills Sur. No. 467 ..... T.D. 2,280 ft; tested S.W.; drlg. ahead.
Greenwood & Calvert's No. 1 G. A. Booth, 3,200 ft. from NW line, 7,000 ft. from SW line of 4 miles SW from Calliham ..... T.D. 1,625 ft; drlg.
C. R. Pope, Inc.'s No. 1 A. C. Miles, 200 ft. to E line, 2,375 ft. to S line, Sur. 149 ..... Rigging up.
C. C. Shumway's No. 2 Shiner, half mile SW of No. 1.. T.D. 3,300 ft; abd.
S. R. C. Oil Co.'s No. 1 La Chusa, 1,320 ft. to S and E lines of Sur. 47 ..... T.D. 2,890 ft; drlg.
Tarver & Nance Co.'s No. 2 Dickson Farm Mrtg. Co., 700 ft. due W of No. 1, 900 ft. from NE line, 300 ft. from SE line of survey, Sec. 45 ..... T.D. 682 ft.; changing rigs.

NUECES COUNTY

John F. Camp's No. 1 King, 150 ft. from N and W lines of E½ Sec. 29 of Richard King Subd. Sur. .. Bldg derrick.

STARR COUNTY

S.&B. Oil Co.'s No. 1 Crown Brick & Tile Co., 1,800 ft. S of State Highway No. 4 and 588 ft. from W line of Porcion 87, near La Puerta ..... T.D. 4,530 ft; waiting for csg.
W. P. Chancellor's (Bryan & Tharp) No. 1 A. Guerra, 26,000 ft. from line, 2,600 ft. from E line of Share No. 6 of San Jose grant, in NE cor. of county ..... T.D. 1,410 ft; waiting for tools.
Chiquita Oil Co.'s No. 1 Starr County Cattle Co., 341 ft. from W line, 271 ft. from S line of Share 60, Partition of Porcions 38 and 39 ..... T.D. 618 ft; drlg.
F. R. Cooper's No. 1 J. M. Martinez, 150 ft. to S and E lines of A.B.&M. Sur. No. 135 ..... T.D. 2,000 ft; changing to rotary.
Goodwin & Yantis' No. 1 Walker, 450 ft. SE of W line of Isabel Lopez property in Sur. 767 ..... T.D. 1,000 ft; moving in rotary.

UVALDE COUNTY

Evans & Thompson's No. 1 Farris, 400 ft. from S and W lines of 535-ac. tract near center of John J. Hammond Sur. ..... T.D. 300 ft; changing rigs.

WEBB COUNTY

Earl Calloway et al's (Osborne) No. 1 Gates, 330 ft. from N and W lines, SE Sec. 14, Blk. 1 (Gates ranch), C.C.S.D.&R.G.N.G.R.R. Sur. ..... T.D. 1,700 ft; drlg.
Cole Pet. Co.'s No. 1 A. Villareal, 330 ft. from S and W lines of Sur. No. 1,090, 5 miles E of Oilton ..... T.D. 2,525 ft; drlg.
Edwin M. Jones' No. 1 Callaghan, 1,650 ft. from E line, 990 ft. from S line of Sec. 403 of T.S.&F. Sur., 13 miles E from Callaghan Switch ..... Spudded in.
Seagraves & Salsbury's No. 1 A. E. Gates, 2,880 ft. from S line, 725 ft. from W line of Sec. 66, Blk. 1, C.C.S.D.&R.G.N.G. Sur. ..... T.D. 1,180 ft; drlg.
Shankle & Roche's No. 1 W. W. Stell, 660 ft. from N and W lines of NW NW of No. 37 Sur., 11 miles N from Mirando City ..... Rigging up.

WILSON COUNTY

Sexton Pet. Co.'s No. 1 Joe Gutzeit (1,032-ac.), 150 ft. from W line, 150 ft. from S line of road of F. Flores No. 18 Sur. ..... T.D. 175 ft; drlg.

ZAPATA COUNTY

Hamilton, Brower & Crow's No. 1 Slator, 2,111 ft. from SW line, 1,980 ft. from SE line of Blk. 1, Subd. of Slator ranch in J. V. Borrego grant ..... T.D. 1,240 ft.; standing.
O. W. Killam's No. 3 A. M. Bruni, 150 ft. from NW and NE lines of Blk. 93, Killam Subd. B-8, Blas Uribe 2,561 acres in San Ignacio Subd. of J. V. Borrego grant ..... T.D. 1,337 ft; abd.
A. C. Savey et al's No. 1 Flores, 150 ft. from NW line, 206 ft. from NE line of Blk. 8, Share 1 of P. A. Richer Subd. of Porcion No. 38 ..... T.D. 600 ft; standing

A. H. Wray's No. 1 Gopher Trust Est., in Fullerton Subd. of Share 8 of J. V. Borrego grant ..... T.D. 310 ft; drlg.

ZAVALA COUNTY

Zavala O. & G. Co.'s No. 1 Gates, 1,320 ft. from N line, 1,320 ft. from E line of Hooper & Wade Sur. No. 18.. T.D. 4,920 ft; drlg.

Southwest Texas Proven Areas

Week Ending April 8

HILBIG POOL—BASTROP COUNTY

Company, well farm name, section and block— Remarks

Humble O. & R. Co.'s No. 1 Peter Goertz, 1,360 ft. to W line, 415 ft. to N line of 100-ac. tract ..... T.D. 2,595 ft; coring Serpentine.

Humble Oil & Refining Co.'s No. 1 Ed Wilhelm, 235 ft. from W line, 330 ft. from S line of 223-ac. tract in Samuel Wolfensbarger Sur. ..... T.D. 2,453 ft; comp. 30 bbls. hrly.

Humble O. & R. Co.'s No. 1 Osborne, 330 ft. from N and W lines of 63-ac. tract ..... T.D. 2,617 ft; top chalk.

Humble O. & R. Co.'s No. 2 Wolfensbarger, 330 ft. from S and W lines of tract ..... Spudded in.

RIDDLE POOL—BASTROP COUNTY

Ogden & Reed's No. 2 Riddle, 600 ft. S and E of No. 1 Riddle in 94.5-ac. tract in Joshua Gray Sur. ..... T.D. 2,287 ft; abd.

Eastland Oil Co.'s No. 1 Riddle, 150 ft. from E line, 850 ft. from S line of 39-ac. tract in Leach Sur. .... T.D. 2,254 ft; abd.

Marts and Beavens' No. 1 Riddle, 162 varas N of S cor., 54 varas from W line of 39-ac. tract in John Maxmilian Sur. ..... T.D. 2,302 ft; comp. 300 bbls. dly.

Witherspoon Oil Co.'s No. 1 A. D. Harris, 1,050 ft. from NW line, 3,350 ft. from SW line of John Maxmillan Sur. ..... Rigging up.

TULETA POOL—BEE COUNTY

Aztec Oil & Roy. Co.'s No. 2 Taylor ..... Pettus sand 4,099-4,109 ft; T.D. 3,950 ft; drlg.

Grisham et al's No. 1 Rapp & Hatch, center of SW 40 acres of 217.5-ac. tract in Sec. 12 of Jose Maria Uranga Grant Sur. ..... Rigging up.

NORTH GOVERNMENT WELLS POOL—DUVAL COUNTY

W. T. Daniels' No. 1 F. J. Smith, 330 ft. from N and W lines of SW of NE of Sur. No. 46 ..... T.D. 2,311 ft; set csg.; W.O.C.

Humble Oil & Refining Co.'s No. 4 Hahl, 330 ft. from S line, 316 ft. from W line of E of Sec. 360 ..... T.D. 2,307 ft; comp. 91 bbls. in 2 hrs.

Navarro Oil Co.'s No. 4 Hahl, 340 ft. from S and W lines of W half of Sur. No. 360 ..... T.D. 2,398 ft; running tubing.

Reynosa Oil Co.'s No. 5 C. W. Hahl, 330 ft. to N line, 990 ft. to W line of N½ of NE of Sur. 42 ..... T.D. 2,307 ft; running liner.

Southwest Drlg. Co.'s No. 3 Wendt, 330 ft. from S and W lines of SE of Sur. 43 ..... T.D. 2,254 ft; comp. 50 bbls. hrly.

The Texas Co.'s No. 7 Johnson, 990 ft. from E line, 330 ft. from N line of S½ NW 3-4 Sur. No. 42.... T.D. 2,258 ft; running liner.

PETERS POOL—DUVAL COUNTY

Shasta Oil Co.'s No. 3 Peters, 330 ft. from N and W lines of S of W 200 acres of S½ of Sur. No. 175.. T.D. 110 ft; drlg.

SARNOSA POOL—DUVAL COUNTY

Atravasada Oil Co.'s No. 1 P. Henrandez, 330 ft. to NW and SW lines of E half of Sur. 574 ... . T.D. 2,488 ft.; bailing.

Magnolia Pet. Co.'s No. 2 M. Ruiz, 330 ft. from SW and SE lines of Sur. No. 574 ..... T.D. 2,435 ft; swabbing.

SAL-MAR POOL—GUADALUPE COUNTY

Sal-Mar Oil Co.'s No. 1 Chas. Woehler, 1,040 ft. from N line, 300 ft. from E line of G. W. Williams No. 46.. Rigging up.

SANDIA POOL—JIM WELLS COUNTY

Crude Oil Royalty Co.'s No. 1 Allen (first carried as Hughes & Long's No. 1 Wade), Cen. Blk. 2, Wade ranch ..... T.D. 2,100 ft; S.D.

JACOB POOL—McMULLEN COUNTY

Jacob, Buzzini & Pickett's No. 11 Jacob, 160 ft. from most westerly SE line, 1,542 ft. from NE line of Jacob Sur. No. 8 ..... T.D. 952 ft; swabbing.

SAXET FIELD—NUECES COUNTY

C.N.T. Co.'s No. 1 L. M. Vance, 330 ft. from E line, 1,320 ft. from S line of 255-ac. tract in Sur. 402.. T.D. 1,491 ft; drlg.

Gibson Oil Co.'s No. 2 Rand Morgan, 1,320 ft. from N line, 330 ft. from E line of lease ..... T.D. 4,852 ft; in sand.

Gulf Port Oil Co.'s No. 3 Frank Bliss, 1,699 ft. to N line, 350 ft. to E line of 235-ac. tract in J. W. Stevens Sur. No. 406 ..... T.D. 4,831 ft; drlg.

Gulf Port Oil Co.'s No. 8 Humphreys, 115 ft. from N line, 330 ft. from W line of lease (S offset to No. 1 Gibson, Rand Morgan Sur.) ..... Rigging up.

Gulf Port Oil Co.'s No. 1 Rand Morgan, 330 ft. from N and E lines of 80-ac. lease ..... T.D. 4,858 ft; swabbing.

Holliday et al's No. 1 Smith, 330 ft. from S and E lines of 700-ac. tract ..... T.D. 4,880 ft; est. 75 bbls.

Sinclair Prairie's No. 1 Insencse, 330 ft. from N and W lines of 80-ac. tract in Sur. No. 404 ..... Rigging up.

MATHIS POOL—SAN PATRICIO COUNTY

Geo. W. Scruggs' No. 1 Collins ..... T.D. 1,515 ft; drlg.

WHITE POINT FIELD—SAN PATRICIO COUNTY

Saxet Oil Co.'s No. 19 Rachel ..... T.D. 7,204 ft; coring.

LOS OLMOS POOL—STARR COUNTY

Hooks & Weavers' No. 14-A2 Kelsey Bass, 200 ft. from W line, 250 ft. from S line of E 30 acres of NE SW Sec. 6, Pors. 75, 76, 77, Camargo ..... Drlg. 1,126 ft; moving in larger rig.

RIO GRANDE CITY—STARR COUNTY

Ed Caiggett's No. 1 Ida Davis, 150 ft. from S line, 1,250 ft. from W line, Share 4, Porcion 81, in Camargo Sur. ..... T.D. 1,600 ft; being carried to 2,500 ft. by J. A. Myers.

Sioux Oil Co.'s No. 4 Goodrich, 975 ft. from W line, 662 ft. from N line, Blk. 1, Tract 5, Porcion 81, Camargo ..... T.D. 1,470 ft; recementing csg.

LAUREL POOL—WEBB COUNTY

Montex Oil Co.'s No. 1 Garcia & Villareal, 150 ft. from NW and SW lines of W half of S half of Blk. 14, Sur. 720 ..... T.D. 1,980 ft; drlg.

Shankle & Newton's No. 1 S. Benavides, 330 ft. from S and E lines of Blk. 13, in No. 2,272 Sur. ..... T.D. 40 ft; set surface csg.; W.O.C.

South Texas Oil Co.'s No. 15 Laurel (Rosenberg), 750 ft. from S line, 611 ft. from E line of Blk. 16 in No. 271 Sur. ..... T.D. 1,200 ft; drlg.

South Texas Oil Co.'s No. 14 Laurel (Rosenberg), 231 ft. from W line, 450 ft. from S line of Blk. 16, Sur. No. 271 ..... T.D. 2,205 ft; swabbing.

Sal-Mar Oil Corp.'s No. 1 Vela, 660 ft. from NW and SW lines of Blk. 16, Sur. No. 1,011 ..... T.D. 1,600 ft; drlg.

MOCA POOL—WEBB COUNTY

Moca Oil Co.'s No. 3 Duval County Ranch Co., 170 ft. from W line, 1,110 ft. from N line of Blk. 22, Share 3 of Zapata County School Land Sur. ..... T.D. 871 ft; in sand; setting csg.

Whisenant & Trenchard's No. 1-A Duval County Ranch Co., 650 ft. to N line, 150 ft. to W line of Blk. 13, Sur. 101 ..... T.D. 856 ft; drlg.

ESCOBAS POOL—ZAPATA COUNTY

Lefevre et al's No. 1 M. Garza Hrs., 330 ft. from NW and SW lines of Blk. 53, C. A. Douglas Subd., Zerro ranch, Comitas Grant Sur. ..... T.D. 1,630 ft; drlg.

B. W. Roscoe's No. 3 Bustamente, 300 ft. from NE line, 375 ft. from NW line of SE of Share 33, Comitas grant ..... T.D. 1,240 ft; set csg.

The Texas Company's No. 30 Measles, 2,750 ft. from SE line, 19,084 ft. from SW line of Cerrito Blanco grant ..... T.D. 1,207 ft; comp. 75 bbls.

MARTINEZ POOL—ZAPATA COUNTY

P. H. Neilson's No. 1 A. Trevino, 300 ft. from S line, 770 ft. from E line of Blk. 10, Sur. No. 411..... T.D. 1,900 ft.; drlg.

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Hobbs April Allowable 28,894 Barrels Per Day

The allowable average daily production of the Hobbs Field, Lea County, New Mexico, during the month of April is given below by companies.

The figures were arrived at by the Hobbs Pool executive committee by using the total number of units now on production (171), and the total average rated potential for the entire field (1,248,845 bbls. in 24 hours), divided by 25 per cent on acreage allowable, and 75 per cent on potential, into a maximum of 28,894 bbls. Using the above figures, the allowable is 41 bbls. per unit, together with .016972 of the average potential.

The new proposed method of prorating the production of the pool on a basis of 40 per cent on acreage and 60 per cent on potential had not received the necessary number of signatures, which made it necessary to continue the method previously agreed upon.

Following are the figures:

Company—	No. of wells	Allowable prod. (bbls. daily)
Amerada	13	2,505
Atlantic	2	199
Continental	12	2,194
Empire	7	1,076
Getty	4	955
Gypsy	13	2,436
Humble	15	3,261
Landreth and Texas Unity	3	397
Mid-Continent	1	75
Stanolind	47	4,915
Ohio	10	1,461
Repolla	5	365
Shell	22	3,630
Skelly	5	533
Sun	4	390
California	5	498
Texas	8	1,213
Texas Pacific	3	347
Tide Water	9	1,363
Magnolia	1	75
Walker	2	51
Total	191	28,894

Kansas Fields

(Continued from Page 52)

Section 8-22-3w, is a rig. Mabee and Shell Petroleum Corp.'s No. 4 Martens, CEL SE NE SE Section 19-22-3w, was completed for 1,000 bbls. from 3,466-84 feet.

McPherson County

Roth & Farout's No. 1 Swanson, NE cor. SW NE Section 13-19-3w, is a rig. Kleppinger and others' No. 1 Becker, NE cor. NW Section 2-20-2w, is a rig. Washoma and others' No. 1 Meeks, NW cor. NE SW Section 7-20-1w (old well drilled deeper), drilling at 3,015 feet. Spencer and others' No. 1 Neufeldt, NW cor. SE SE Section 16-21-3w (old well drilled deeper), at 3,100 feet. Lario Oil & Gas Co.'s No. 2 Neufeldt, NW cor. SW NW Section 34-21-3w, was completed for 1,354 bbls. from 3,465-72 feet. Gypsy Oil Co.'s No. 2 Stuckey, NE cor. 33-20-3w, made 725 bbls. from 3,448-75 feet. Darby Petroleum Co.'s No. 1 Kaegi, SE cor. SW NE Section 20-19-1w, made 61 bbls. from 3,396-4,301 feet.

Rice County

Slick and others' No. 1 Herzog, NE cor. SE Section 27-18-10w, is a location. Same operators' No. 1 Godfrey, NW cor. SW Section 26-18-10w, is a location. Robertson and others' No. 1 Habigger, SW cor NW Section 26-18-10w, is a location. Ramsey and others' No. 1 Ira, SW cor. NW NW Section 32-19-9w, is a location. Same operators' No. 1 Robinson, SW cor. NW Section 32-19-9w, on Lot 11, Block 7, Chase townsite, is a location.

Woodson County

Nye and Kelly's No. 1 Robbins, NW cor. NE Section 17-24-14, is a location.

ALEX COLBOURNE DIES

CHATHAM, Ontaro, Apr. 8.—Alex Colbourne, for many years a prominent figure among Canadian drillers, died at Detroit last week, aged 68. Son of a Petrolia hotel keeper in the early oil boom days, he learned the drilling trade, was one of the first Petrolia men to go to Sumatra, and later worked in Austria and Rumania.

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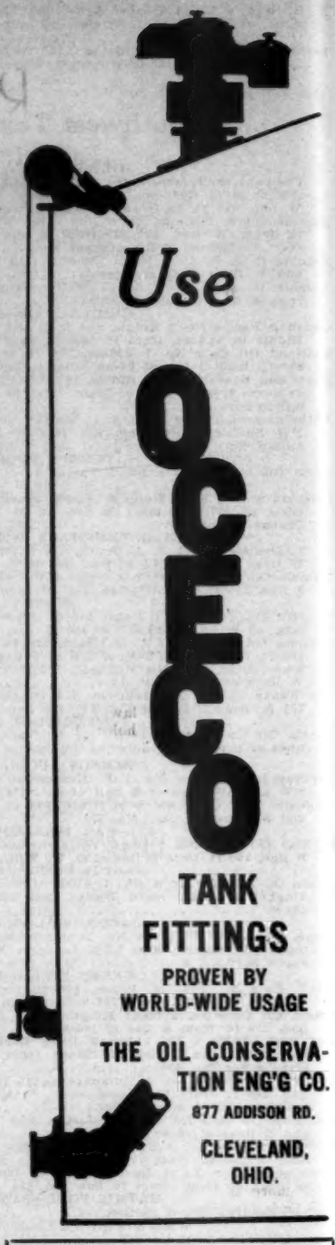
READ THE CLASSIFIED BARGAINS ON PAGE 79



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RENEW YOUR SUBSCRIPTION TO THE OIL AND GAS JOURNAL.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing or transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

No State Law Requiring Operator to Drill a Straight Hole

Has any state passed a law requiring oil operators to drill straight holes? I was told that such is the case, and if it is true I would like to know how any operator in a deep-well field can be sure that he is drilling a straight hole. It seems to me that along with any law requiring straight holes there ought to be instructions for the driller to enable him to obey the law. No oil operator ever drilled a crooked hole because he wanted to. Of course I know that various devices are offered to enable a driller to make straight hole, and I have no doubt they are valuable, but I would like to know whether there are any rules which a driller can follow and be reasonably certain that he will have a straight hole.—W. A. D.

No state has passed a law relative to the drilling of straight holes, but the Texas Railroad Commission in June, 1932, issued an order requiring that holes drilled in the Conroe Field, Montgomery County, that State, must be checked at intervals of not more than 500 feet, thus establishing a precedent in the oil industry indicating official recognizance of the work done by petroleum engineers and production men to correct the evils of hurried drilling and the use of improper methods which contributed to crooked holes. Probably this action of the railroad commission is what your informant understood to be a state law.

The commission's order provides that surveys of the holes shall be made at intervals of not more than 500 feet under the supervision of the commission's field men and no hole on a 20-acre spacing shall deflect more than 5 degrees from the vertical. For holes on tracts of 10 to 20 acres the declination shall not be more than 4 degrees from the vertical and on smaller tracts the holes shall not be off more than 3 degrees.

The order further specifies that the development of the Conroe Field shall be based on the maximum of one well to each 20 acres and no location will be permitted within 933 feet of another nor within 466 feet of a property line. This order is so worded as to prevent evasion or the cutting up of acreage into smaller tracts for the purpose of increased drilling

Having limited the well spacing in this field it was proper for the commission to issue the second rule that requires that the holes shall be reasonably straight and in this way also limit the area in which the bottom of the hole shall be completed. These combined orders were designed to prevent, to a large extent, drainage of offset acreage, limit the number of wells required for the field and result in better production conditions.

Many of the larger companies and individual operators have been specifying the maximum degree of declination permissible in rotary drilled wells and have inserted in their drilling contracts a clause that permitted their representatives to make a survey of a drilling well at any time to check its verticality. If it was found to have deviated from the vertical more than the specified allowable it was necessary for the contractor to plug back to the point where the deviation started and redrill the hole in the manner prescribed in the contract.

A committee of the American Petroleum Institute appointed to make a special study of the crooked hole problem made the following recommendations:

1. A vertical start.
2. Light weight on the bit.
3. Proper type of bit.
4. Moderate rate of circulation.
5. Mud sufficiently heavy to minimize washing and to insure prompt removal of cuttings from face of hole.
6. Concentration of weight adjacent to the bit.
7. Use of oversize or stiffened drill stem immediately above the bit.
8. Use of guides to center drill pipe on hole.
9. Avoidance of ratholing or other unnecessary change in size of hole.

The foregoing recommendations have become common practice among drilling crews, but to them should be added the importance of making frequent checks of conditions in the hole with a view of keeping it plumb. Marked progress has been made in recent years in the development of well-surveying instruments and methods.

Increasing Capacity of the Belt Drive for High Peak Loads

Can you tell me what measures may be taken to increase the capacity of a belt drive in order to take care of extreme load peaks? The drive now in use is equipped with the motor manufacturer's standard pulleys.—S. T. E.

If the capacity of a drive planned with the motor manufacturer's standard pulleys must be increased because of extreme load peaks or for any other reason, there are several things that can be done to the drive, according to Robert W. Drake, electrical and mechanical engineer, who provides the answer to your question. Expedients which will help in such cases, he says, include the following:

1. Putting on paper pulleys, if old ones are wood or metal.
2. Securing higher belt speed by means of larger diameter pulleys.
3. Using the pivoted motor base.
4. Using gravity idler drives.
5. Putting on a wider belt (provided the bearings will stand the extra belt pull necessary if a wider belt is to carry additional load).

Two or three of these are all that are possible in any one case. Occasionally, when conditions are particularly unfavorable, two or three of these expedients must be employed in order to make a satisfactory drive.

Where the smaller pulley of the drive is not paper, an increase of 25 per cent in drive capacity may be obtained by installing a paper pulley. Since all motor manufacturers furnish paper pulleys, they are generally used on the motor but we sometimes lose sight of the fact that in speed-up drives the driven pulley is the smaller and should also be paper. Even on drives where the driven pulley is the larger a worthwhile improvement in capacity and a decrease in slip may be obtained by substituting a split paper driven pulley where the driven pulley is not more than three times as large as the driver.

Why Was It Called That?

TAILINGS

The word "tailings," almost self-explanatory since it usually conveys the idea of the end, or leavings, has come to be used in many manufacturing processes to describe material separated as refuse, waste or dregs. It long has had a place in metallurgy to designate the part rejected in washing an ore that has passed through the screens of a stamp-mill, the worthless slimes left after the valuable portion has been separated by dressing or concentration. In oil refining the term "tailings" or "wax tailings" is applied particularly to the gummy distillate formed after the wax has been taken off and before the still has coked, but it is used also to designate the residue left after each cut in the refining process, especially when rerunning. The word "tail" has an ancient lineage, running back to the Middle English "tayl" and the Anglo-Saxon "taegl," with close kinship to old German, Swedish and Icelandic words of similar spelling and meaning and to the Gothic "tagl," hair.

Buildings and Equipment Needed for Large Booster Stations

I am interested in the subject of booster stations built on the large pipe lines, especially the big gasoline lines which have been put into operation in the last few years. Could you tell me something about the buildings and the equipment that make up such stations? If it is not asking too much, I would like to know just what buildings are necessary, their size, material, the machinery in them and also the accessory units required. —T. E. N.

The Great Lakes Pipe Line Co., which transports gasoline, has three different sizes and capacities of booster stations, 8-inch, 6-inch and 4-inch, so designated from the sizes of the line to which they deliver gasoline. The arrangement of equipment and appurtenances and the design of buildings of all three sizes of stations are identical, and stations vary only in building size and equipment sizes to suit the capacity of the station.

The following information concerning the buildings and equipment comprising a standard 8-inch station is provided by F. E. Richardson, chief engineer and general superintendent of the company:

There are two buildings. One building, 50'x74', is made of brick and tile with precast stone coping and window sills, roof deck of steel covered with one-half-inch insulating board and a built-up tar felt roofing. This building houses the engines and pumps and has a fire wall separating them. It also has attached to it an office and toilet room.

The other building, 24'x50', is constructed of brick and tile, precast stone coping and window sills, roof deck of 2-inch tongue and groove planking covered with one-half-inch insulating board and built-up tar felt roofing. This building houses heating boiler, water circulating pumps, fuel oil pumps, lubricating oil storage, water treating plant, a selection of repair parts and operating supplies.

Adjacent to the above buildings are:

One open-type cypress cooling tower.
One concrete hot well.
One 200-bbl. elevated water tank.
One 100-bbl. elevated fuel oil tank.
One 1,000-bbl. fuel oil storage tank.

One 10-inch suction 8-inch discharge refinery cross type manifold equipment.

Two 330-horsepower 14"x16" 6-cylinder solid injection Diesel oil engines.

Two 5¾"x24" horizontal duplex, four plunger pumps.

Two 25 KW 125-volt DC generators, V belt connected to the engine shaft.

One gasoline driven 15-KW 125-volt DC auxiliary generator.

One two-stage 11-cubic foot motor-driven air compressor.

Three 170 g.p.m. motor-driven centrifugal water pumps.

One 50 g.p.m. motor-driven rotary fuel pump.

One 25-horsepower 15-pound operating pressure welded steel heating boiler.

One 1,000-gallon lubricating oil tank.

One zeolite pressure type water softener.

One dead front switchboard with three buses and inner connections for taking power and lights off of any one of the three generators but at the same time locking out the other two generators.

Two 30,000-bbl. pontoon floating roof tanks.

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STAINLESS AND HEAT RESISTING PIPE AND TUBES

NATURAL GAS DEVELOPMENTS

Authority of Commission Sustained in Louisiana

SHREVEPORT, La., Apr. 10.—The Louisiana Public Service Commission's authority to supervise utilities holding franchises from municipalities was upheld by Judge George K. Favrot in East Baton Rouge District Court.

Judge Favrot denied the application of the Peoples Gas & Fuel Co. of Shreveport for a preliminary injunction to restrain the commission from investigating the company's natural gas distribution in Ruston under municipal franchise. The company, which supplies gas to numerous North Louisiana communities, contended the commission had no authority to investigate its rates and charges.

Judge Favrot ruled that the general municipal corporations act of 1898 under which most of the State's smaller communities are organized, gave municipalities organized under it regulatory power only over utilities owned by such municipalities, and not over privately owned utilities.

The Peoples Gas & Fuel Co. was some time ago directed by the public service commission to submit operation and revenue data relative to its Ruston gas distribution after a group of Ruston citizens complained the company's rates were high.

Town's Right to Fix Rate Tested in Federal Court

SHREVEPORT, La., Apr. 10.—Representatives of the town of Arcadia have been ordered to appear in the Federal Court at Monroe and show cause why a preliminary injunction should not be granted the plaintiff, the Northwest Louisiana Gas Co., Inc., and others, restraining the community from enforcing an ordinance which "purports to fix maximum rates for gas."

The order prohibits the town of Arcadia, or any of its agents, from enforcing an ordinance passed on February 8, which provided for the fixing of maximum rates on gas. The council proposed a rate of 50 cents per 1,000 feet for domestic consumption and a minimum charge of $1 for one month's use. The present charge is 67½ cents per 1,000 feet and a minimum charge of $1.50.

The company asks that the injunction be made permanent. It asserts the town of Arcadia and the company entered into a contract several years ago and that it does not lie within the powers of the town to break the contract.

The two gas companies, the Northwest Louisiana Gas Co., Inc., and the People's Gas Co., Inc., say they have no objection to an investigation of their rates and of finding a just figure, provided the investigating body has the legal power to do so.

MAY SEND REPRESENTATIVE

At a recent meeting of the Council of the International Gas Union, held in Basle, Switzerland, a communication was received from C. E. Paige, chairman of the American Gas Association's reception committee, expressing the hope that a number of the fraternity in Europe would find it possible to accompany the members of the Institution of Gas Engineers on their visit next September and October to attend the annual conventions of the Canadian and American Gas associations and to tour some of the cities in these countries. The Canadian Gas Association has applied for membership in the International Gas Union.

CANADIAN GAS PRODUCTION

CHATHAM, Ontario, Apr. 8.—Official figures just issued show that in February all Canadian fields produced commercially 2,826,995,000 feet of gas compared with 2,945,452,000 feet in January and 3,043,967,000 feet in February, 1932. Mixed (natural and artificial) gas imported into Canada from the United States totaled 8,307,000 feet valued at $6,315 in February compared with 8,936,000 feet worth $6,752 in January.

Wyoming Commission in Disapproval of Gas Rates

CHEYENNE, Wyo., Apr. 10.—The Wyoming Public Service Commission in session in Cheyenne, voted disapproval of any plan which would afford benefits of reduced rates to large consumers but not to those using minimum service as submitted in a new natural gas rate schedule for Casper patrons by the New York Oil Co.

The principal objections to the schedule submitted by the company as stated by members of the commission are against discounts to consumers of large quantities and no relief for patrons consuming small quantities. One of the schedules submitted by the commission would fix the rate at $1.50 for 3,000 feet with a rate of 45 cents for the next 5,000 feet, and on down from there to 25 cents for all gas consumed over 145,000 feet.

The second commission proposal would fix the minimum at the same price, with 45 cents for the next 7,000 feet; 40 cents for the next 15,000 feet; 37½ cents for the next 30,000 feet; 35 cents for the next 45,000 feet, and 32 cents for the next 60,000 feet.

Philadelphia Gas Has Big Reconstruction Program

The Philadelphia Gas Works, Philadelphia, Pa., subsidiary of the United Gas Improvement Co., has announced a comprehensive plan of reconstruction to increase the operating efficiency of its system. F. M. Milward Oliver, vice president, said that the project will require five years to complete. The new plan has been made necessary by changed living conditions, shifting population centers and other phases of growth in the area served by the gas works.

Among the first major steps of the general plant are: Construction beneath the Schuylkill River, just above the Passyunk Avenue bridge, or a tunnel of sufficient size to hold two 30-inch transmission mains, through which gas will be piped to serve the West Philadelphia area; the installation of 2.5 miles of new 30-inch main; the installation of 1.85 miles of 20-inch transmission main and of 2.8 miles of 16-inch main to increase the supply of gas to the southeastern portion of the city. There is also involved the installation of additional pumping capacity.

Among the other work to be undertaken, new gas pumping and compressing equipment will be installed at various stations.

The total cost of the project will approximate $500,000.

INDIANS OPPOSE USE OF GAS

CHEYENNE, Wyo., Apr. 10.—Use of natural gas on the Wind River Reservation in Wyoming is protested against by Shoshone and Arapahoe Indians. By using natural gas the Indians say they are deprived of work and haul of coal on the reservation.

Cost of Helium Reduced; Amarillo Producing More

AMARILLO, Tex., Apr. 10.—Operating at its present capacity the U. S. Government helium plant here will produce during the fiscal year ending June 30, a total of approximately 18,000,000 feet of gas. By experiments and improvements the cost of producing the product has been reduced from $104 per 1,000 feet in 1920 to $7.10. The production cost probably will be brought down to approximately $5 per 1,000 feet within the next few months, it was stated.

It requires approximately 9,000,000 feet to supply the Akron each year, based on 1½ inflations, and a similar amount for the Macon. The prospective surplus of helium this fiscal year, thus, will not be large. The helium that is to be used in inflating the new Macon has been transported to Akron, Ohio, in specially constructed railway tank cars.

The capacity of the plant has been increased so that it is now capable of producing more than 37,000,000 feet annually.

Sales of Gas Companies Show Decline in January

Revenues of the manufactured and natural gas industry aggregated $69,997,600 for January, compared with $74,004,100 for January, 1932, a decline of 5.5 per cent. The manufactured gas industry reported revenues of $34,288,400, a drop of 8.8 per cent, while revenues of the natural gas industry totaled $35,709,200, or 2.2 per cent less than for January, 1932. Sales of manufactured gas reported for January totaled 32,323,900,000 feet, a decline of 6.9 per cent, while natural gas sales were 90,047,200,000 feet, a drop of 1.1 per cent.

As of January 31, 1933, total customers of the industry aggregated 15,376,500, compared with 15,985,200 on the same date 1932, an indicated loss of more than 600,000 customers.

The relatively smaller decline in sales and revenues reported by the natural gas industry resulted from a gain of 2.4 per cent in sales to domestic users and an increase of 5 per cent in commercial sales. This was more than offset, however, by declines in sales of natural gas for industrial purposes.

The only gain reported by the manufactured gas industry was in the sale of gas for house heating, which increased nearly 6 per cent. Manufactured gas sales for other domestic uses, such as cooking, water heating and refrigeration, showed a loss of 7.4 per cent, while sales for industrial-commercial purposes declined nearly 11 per cent.

GAS PRODUCTION IN NEW YORK

Fourteen of New York State's 62 counties now produce natural gas, according to a report by State Geologist D. H. Newland. The report describes the new Wayne-Dundee Field which was discovered in March, 1930. This field has a ratio of five completed wells to every dry hole and occupies a clearly defined structure, with many wells producing as high as 10,000 feet of gas daily.

SENDOUT SETS NEW RECORD

The Peoples Gas Club News, published by the People's Gas Light & Coke Co., Chicago, Ill., says: "The largest 24-hour sendout of gas in this company's history was recorded on February 9, Chicago's 'coldest day in 34 years,' when 844,960 therms of gas helped the city to weather the subzero temperatures."

OZONA TO GET GAS

SAN ANGELO, Tex., Apr. 10.—Ozona, Crockett County seat, is to have natural gas within the next 120 days under the plan of Harve Loomis of Longmont, Colo.; H. H. Shaw of Baird and M. G. Williams of Gorman, who were recently awarded a franchise by the Crockett Commissioners' Court. Mr. Loomis said a 14-mile, 4-inch pipe line will be laid from the Stanolind Oil & Gas Co. and Mid-Kansas Oil & Gas Co.'s gas well northwest of Ozona. About 300 patrons are expected at first by the Ozona Gas Co., which is to be the distributing agency.

H. N. Greis, F. Buttram Join O.N.G. Directorate

Two Oklahomans not previously affiliated with the Oklahoma Natural Gas Corp. were elected to the board of directors at the annual stockholders' meeting at Baltimore, Md. The new members are Henry N. Greis of Tulsa and Frank Buttram of Oklahoma City. Other members elected are Frank E. Kistler, chairman; A. L. Farmer, Walter Ferguson, Wilbur T. Funk, Dudly D. Morgan and Robert W. Hendee president of the company, all of Tulsa, and Charles W. Gunter of Oklahoma City.

Mr. Greis, president of the Burke-Greis Oil Co., a director of the Mid-Continent Petroleum Corp. and the First National Bank of Tulsa, was the organizer and president of the Atlantic Petroleum Corp., which became a part of the Mid-Continent Petroleum Corp. He recently was made receiver of the Deep Rock Oil Corp. Mr. Buttram is president and owner of the Buttram Petroleum Corp.

Judge R. C. Allen, general counsel, and W. K. Cottrell, secretary and treasurer of the company, requested that they not be re-elected to the directorate in order to provide places for Oklahomans not previously connected with the company. They remain as officials of the company.

Plans Under Way to Take Over Casper's Gas System

CASPER, Wyo., Apr. 10.—An escrow contract agreement between the city council of Casper and the Lakota Oil & Gas Co. of Minneapolis, Minn., for the acquisition of the natural gas distribution system in Casper has been placed with the Wyoming Trust Co.

Several steps now must be taken preliminary to further progress. The Lakota company has 60 days in which to satisfy members of the city council that it has an ample gas reserve. If the city is satisfied with this showing then the Lakota company has 30 days to make a financial showing that it is prepared to carry out the provisions of the contract financially. When these preliminaries have been made to the satisfaction of the city council the Lakota company will be required to furnish a bond in the sum of $400,000 to carry out the provisions of the contract.

The entire issue of taking over the distributing system is now in the Natrona County District Court. The court will be asked for declaratory judgment stating just what physical assets and equities the city will be required to pay for in case it takes over the system.

LARAMIE LOOP COMPLETED

LARAMIE, Wyo., Apr. 10.—The Rocky Mountain Gas Co. has completed its loop to the west side addition in Laramie. The company has been employing about 40 men. All pipe line work is performed by the Illinois Pipe Line Co., an affiliate of the Ohio Oil Co.

TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the questions is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Substance That Causes Corrosion Should Be Determined

We are taking vapor from the top of a 50-foot bubble tower at 230° F. to an exchanger and condensers. When the temperature reaches 180° and down to 110° it is practically impossible to hold an iron pipe for more than two weeks. Neutralization with ammonia has been tried in varying quantities with no success. Could you give us any suggestions as to non-corrosive tubes or other means for solving this problem?—D. H.

The important consideration where corrosion is a problem is to ascertain the nature of the material causing the damage and to locate its origin. Hydrogen sulphide, hydrochloric acid, and sulphuric acid are the most frequent causes of corrosion in the petroleum industry. Certain forms of sulphur, free sulphur and organic acids may be responsible for some corrosion but any damage caused by these is very slight when compared to that caused by the other substances that have been mentioned. When water is present in the oil, or in contact with the pipes, as in a spray or submerged coil system, electrolytic corrosion may result.

Relatively low temperatures in the corrosion zone, that is temperatures below the boiling point of water, 212° F., suggest acid corrosion. This explains why so many instances of serious corrosion are met with in heat exchangers, cooled lines, condensers, and low places where condensed water may collect. Hydrogen sulphide, in the presence of small quantities of air and moisture, tends to decompose at low temperatures, with the deposition of sulphur and the formation of acid. At high temperatures, possibly above 500°, hydrogen sulphide is especially active.

The substances that have been mentioned are mostly derived from oil. A few corrosive substances, especially chlorides, are introduced in the water contained in some oils. These chlorides may decompose to form hydrochloric acid, which is rapidly corrosive at temperatures between 110° and 180° F. on the lighter streams. Sulphuric acid may be produced in several different ways, depending upon the character of the sulphur compounds contained in the oil and their temperature of decomposition, but the most common source is probably hydrogen sulphide. This may be present in the oil as such or be formed from the organic sulphur compounds through decomposition at high temperatures. Any of these corrosive substances may be detected by proper chemical inspection.

The use of neutralizing agents is one method for control of the corrosive compounds. Ammonia is well adapted for this purpose but the point of introduction is important. It should be put into the stream on the cooler side of the tower, for at high temperatures the resulting sulphide or chloride may cause trouble. If sulphide is formed it will decompose at high temperature and thus offset the neutralization and if the chloride is produced it is liable to be deposited as a solid in the cooler parts of the tubes and system. Another remedy is the use of a corrosion inhibitor, such as the chromates. Potassium dichromate or sodium chromate solutions may be used. These solutions containing 2 to 3 pounds per 1,000 gallons of water, are introduced into the condensing system just ahead of the corrosion area, as when introducing ammonia. A few refiners who handle a highly corrosive oil pretreat the oil before it is run. The noncorrosive metals that have been used with success in exchanger and condenser tubes include the special nickel and chrome alloys. Whatever the remedy may be it should be selected only after a thorough survey has been made, as suggested in the first part of this discussion.

Relation of Compression Ratio to Knocking Tendency

What is meant by compression ratio as applied to the gasoline engine? How is this compression determined and what is its relation to the knocking tendency of the motor fuel?—R. G.

The gasoline engine is so adjusted that a mixture of gasoline vapor and air is drawn into each cylinder on the downward stroke of the piston through the intake valve. When the piston reaches its maximum distance, lowest position, the firing mixture is trapped by the closing of the inlet valve and at this point the cylinder contains its capacity, say a volume of 40 cubic inches. Then the piston moves upward to compress the 40 cubic inches of gasoline vapor and air into the small space at the head of the cylinder, where the spark plug is located, ready to be exploded by the timed firing of the spark plug. If this last reduced volume is, say 10 cubic inches, the volume has been reduced to one-fourth and the engine is said to have a compression ratio of 4 to 1. Expressing it another way, the compression ratio is the relative volume in the cylinder at the end and beginning of the stroke.

The automotive engineers have determined that a motor of 5 to 1 compression ratio will produce 14 per cent more power with the same fuel than the same type motor at 4 to 1 compression ratio; 7 to 1 compression ratio will produce 16 per cent more power than 5 to 1 compression ratio; and 8 to 1 compression ratio will give 35 per cent more than 4 to 1 compression ratio.

The reason that the higher compression ratios are not used is that suitable fuels are not available. Ordinary gasoline will knock more with increase of compression ratio. The first scheme for grading the knocking tendency of gasoline was the H.U.C.R., which is the highest useful compression ratio. That is, the compression ratio at which the gasoline would not knock, determined in a testing engine provided with a variable cylinder head, so that the compression ratio could be changed while the engine was in operation. The present scheme of octane number is simpler, reference fuels of known octane content being used to match the unknown fuel under fixed conditions of operation.

Ichthyol Is Manufactured From a Special Oil Shale

I would appreciate your advising me the present market value of the natural petroleum substance known as ichthyol. Is any of this substance being marketed at the present time?—H. B. W.

The common source of ichthyol is a bituminous shale found in Austria in a deposit which is very rich in fossil fish, hence the name, ichthyol, from the Greek word meaning fish. The preparation of the product includes distillation of the shale in vacuum, usually with the application of superheated steam, so that a thick yellowish to brown oil with a slight bituminous odor is obtained. This oil contains a large quantity of sulphur, possibly 2.5 per cent or more, and some indication of the sulphur content is to be observed in the traces of sulphurous acid which may be detected in the odor. The crude oil as obtained from the shale by distillation is sulphonated, neutralized with an alkali (ammonia is largely used for this) and then separated from the chemicals. The sulphonating process increases the sulphur content four or five times that of the crude oil. I do not know of any deposit of pure ichthyol being found in the United States.

The crude ichthyol oil may have a specific gravity of 0.865 (32 A.P.I.) and boil between 212° and 490° F. The various fractions have the characteristic odor of petroleum somewhat diluted with that of the mercaptans. When the vapors are led into concentrated sulphuric acid, a violet to blue color is produced.

Pure ichthyol is sold as a heavy black oil or paste which is used as an ointment, selling at retail for 75 cents an ounce. The form in which ichthyol frequently appears is ammonium sulphoichtholate, a substance of uncertain chemical composition, used for the treatment of burns, eczema and other skin infections.

When testing a product which is supposed to be ichthyol the easiest test to apply is that of solubility in water. The water solution has a brown color with fluorescence. It is also soluble in a mixture of equal parts of ether and ethyl alcohol.

Presence of Oil in Natural Gas and Its Removal

Can you furnish any information and references concerning the oil fogging of natural gas?—L. S.

Some natural gas is produced at the well containing enough oil to produce a fog or mist. Such gas is known as "wet" gas and is usually processed for natural gasoline so that all traces of oil are removed at the gasoline plant. The residue gas, practically free from liquid, is then delivered to the pipe line. Occasionally natural gas will contain enough moisture to cause a fog when the gas is released into a cold atmosphere.

When a gas well is spraying oil it is the practice to install an oil trap on the lease for the removal of the larger part of the oil. The gas lines, for the transportation of gas over long distances, are frequently equipped with traps or drips and filters, since any liquid carried in the gas will tend to collect in low places to cause either total stoppage of the flow or result in pulsating because of the change in pressure. The presence of oil in gas is so serious that every effort is made, by the use of the devices indicated, to keep it dry, and as a result the delivery to the consumer of a gas containing enough oil to cause a fog is extremely rare. In addition to causing line trouble, an oily gas cannot be satisfactorily burned in the standard gas stoves and gas appliances.

For traps and filters see—Burrell; Recovery of Gasoline from Natural Gas, page 463. Diehl; Natural Gas Handbook, page 415.

Lowered Distillation Temperature Improves Knock Rating

A gasoline tests—I.B.P. 97° F., distillation 37% at 221°, 65% at 284°, 95% at 392°, endpoint 420°, loss one per cent. What change in this gasoline would make it better antiknock gasoline?—J. G. P.

The knock rating of a gasoline may be raised by lowering the distillation range, provided other characteristics, such as vapor tension, are not seriously disturbed. If this gasoline were fractionated to an endpoint below 400° F. and the front end were made more volatile, some improvement in knock rating would be obtained. Some gasoline has been shown to contain narrow cuts, practically constant boiling fractions, which are bad knockers and if it were possible to eliminate these, the knock rating of the gasoline would be improved. However, the separation of such fractions in the refinery would be difficult and would add so much to the manufacturing expense that it would not be practical.

Reduction of endpoint and the addition of light material in sufficient volume to materially lower the initial boiling point and to increase the volume distilled at the 10 and 20 per cent points is commonly practiced for the purpose of improving volatility and raising the octane rating.

See The Oil and Gas Journal, March 5, 1931, and Ind. Eng. Chem. 22, 913, 1030.

PERSONAL PARAGRAPHS

G. P. Dirth, the Oakite Company, Chicago, Ill., was a business visitor in Tulsa for a few days.

* * *

W. H. Wievel, Timken Steel & Tube Company, Canton, Ohio, was in Tulsa last week on business.

* * *

F. A. Singler, St. Louis Can Company, St. Louis, called on oil company buyers in Tulsa a few days ago.

* * *

Vincent E. Fox, All Steel Equipment Company, Chicago, called at oil company offices on a recent visit in Tulsa.

* * *

Earl S. Porter, vice president of the Amerada Petroleum Corporation, Tulsa, spent some time in Fort Worth, Tex., recently.

* * *

R. S. King has moved from New York to Los Angeles, Calif., where he is associated with the General Petroleum Corporation.

* * *

Mayor and Mrs. S. E. Ludwig, of Bexley, Ohio, visited their son-in-law, Paul G. Benedum, in Shreveport, La., last week.

* * *

G. C. Terry, sales representative of Wall Rope Works, Inc., has completed a six weeks' trip over the oil territory in Texas and Louisiana.

* * *

Charles E. Roeser, president of the Texas Oil and Gas Conservation Association, Fort Worth, Tex., has returned from Washington, D. C.

* * *

G. A. Tompson, purchasing agent, the Empire Companies, Bartlesville, Okla., spent a few days in Texas recently looking over company properties.

* * *

Harold W. Hoots, a member of the Union Oil Company's geological department, has returned to the headquarters of the company in Los Angeles from Texas.

* * *

R. C. Stoner, manager of production for the Standard Oil Company of California, San Francisco, Calif., has been in Texas on a business trip, and looking over Texas fields.

* * *

R. E. (Bob) Bering and John W. Sherman were re-elected president and first vice president respectively of the Lincoln Petroleum Corporation at the annual meeting held in Los Angeles recently.

* * *

Deam Norval White, Pacific Coast representative of the American Petroleum Institute for the past 11 years, will leave that organization April 15. He will take a rest before making plans for the future.

* * *

George R. Elliott, for some time Alberta government petroleum engineer at Lethbridge, and Charles W. Dingman of the Calgary office, have resigned. Mr. Elliott recently returned from a visit to the East and New York.

* * *

J. E. Warren, production superintendent and petroleum engineer for the Continental Oil Company, has been transferred from the Panhandle district to the Big Lake Field in Reagan County, Texas, with headquarters at Texon.

* * *

P. E. Drachman, who formerly was connected with the gas company in San Angelo, Tex., but who was later sent to New York, then to Oklahoma, is now back in San Angelo in charge of the Texas Public Service Company.

* * *

Edward Brady, of the Richfield Oil Company; H. S. Briscoe, of the Franco-Wyoming Oil Company; R. L. Minckler, of the General Petroleum, and W. B. Thomson, of the Kettleman North Dome Association, conducted a symposium on "New Deals and New Dealers" at the last monthly meeting of the Los Angeles Petroleum Accountants Society.

O. E. McClatchey, purchasing agent, Barnsdall Oil Company, was in Kansas City recently on company business.

* * *

C. E. Whitney, representing Baker Oil Tools, Inc., Huntington Park, Calif., is on a business trip through the Mid-Continent and Texas oil fields.

Men of the Industry

CORNELIUS B. WATSON

All retail and wholesale sales, all manufacturing, operation of all pipe lines and the operation of all steamships and oceangoing vessels come under the jurisdiction of Cornelius B. Watson, vice president and director of the Pure Oil Company. Besides this he has supervision of about 50 marketing companies which are subsidiaries of the Pure Oil Company or affiliated with that organization.

Mr. Watson, who was born in Bradford, Pa., June 4, 1887, was graduated from Hill Preparatory School, Pottstown, Pa.; received his B.Ph. in metallurgy at Sheffeld Scientific School, Yale University, in 1908, and took postgraduate work in mining and law for two years. Upon leaving school he entered the oil business as a field engineer in the producing branch. His father, Gilbert L. Watson, was an oil producer in Pennsylvania and West Virginia, and founded several producing companies, some of which are still doing business.

Oklahoma attracted the young man and going to the oil fields of that State, he became a construction engineer, erecting natural gasoline plants. He continued in this line of work till 1916, when he joined the Pure Oil Company, then Ohio Cities Gas Company, as manager of its natural gasoline plants. Two years later Mr. Watson was made assistant manager of the company's producing division. In 1919 he became assistant to the president, which position he held till 1924, in that year being chosen vice president, in charge of all refineries and bulk sales. In 1924 he became a director. There have been built under Mr. Watson's direct supervision three refineries with a total capacity of about 55,000 barrels of crude oil per day, three major pipe line projects, with a fourth one starting, besides innumerable smaller projects, such as ocean terminals, tank farms, bulk plants, etc.

Mr. Watson in 1911 married Miss Louise Smith, of Scranton, Pa. With their four children they reside on the North Shore of Chicago.

G. A. Binz, general sales manager, Sarco Company, Inc., New York, was in Tulsa last week.

* * *

Elmer Nall, sales representative of the American Can Company, was a recent Tulsa business visitor.

* * *

L. L. Rector, president, Rector Well Equipment Company, Fort Worth, Tex., was in Tulsa last week on business.

* * *

Emil Kluth and H. K. V. Tompkins of George F. Getty, Inc., were re-elected vice presidents at the annual meeting of the company.

* * *

Walter M. Napier has been appointed service station supervisor for the Standard Oil Company of Louisiana at Memphis, Tenn.

* * *

Arthur Moorhead, sales manager for the Locomotive Finished Material Company, of Atchison, Kans., is calling on Mid-Continent distributors.

* * *

L. F. Phillips, representing the American Steel Company, Kansas City, called on oil country buyers in Tulsa and vicinity during the past few days.

* * *

E. I. Smith, Blake Smith and R. L. Wheelock were re-elected directors for the E. L. Smith Oil Company of Mexia at a meeting of stockholders held last week.

* * *

G. S. Boetsma, New Jersey branch manager for the Standard Oil Company of New Jersey, recently addressed the fourth annual Greater New York Safety Conference.

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Comer Plummer and R. Z. McGowan, assistants to R. W. McIlvain, vice president in charge of production for the Pure Oil Company, Chicago, have returned from a trip to Texas.

* * *

Ralph B. Lloyd, Alphonzo E. Bell, C. P. Watson, J. J. Doyle, C. C. Spicer, Rush M. Blodget, Roscoe W. Stephens and Neal H. Anderson have been elected directors of the California Oil Producers Sales Agency.

* * *

J. A. Bermingham, vice president of The Texas Company of California, Los Angeles, visited friends in Fort Worth, Tex., last week. Mr. Bermingham was formerly connected with The Texas Company in Fort Worth.

* * *

A. R. Denison, division geologist, Amerada Petroleum Corporation, Fort Worth, Tex., addressed the Tulsa Geological Society on the evening of April 3 on the geological history of the Kelsey Dome, Upshur County, Texas.

* * *

W. E. Beyhan, superintendent for the Continental Oil Company, has been transferred from the Big Lake Field, Reagan County, Texas, to Ship Rock, N. Mex. J. C. Johnston, formerly superintendent in the Ship Rock area, has been transferred to Borger by the company.

* * *

Frank Clark, of the Mid-Kansas Oil & Gas Company, Tulsa, and newly elected president of the American Association of Petroleum Geologists, addressed the Fort Worth, Tex., Geological Society. W. J. Nolte, of the Stanolind Oil & Gas Company, Fort Worth, read a paper on "Method of Sampling Deep Rotary Holes."

* * *

Dr. L. W. Stephenson, of Washington, D. C., chief of the section of coastal plain investigations of the U. S. Geologic Survey, has been in San Angelo, Tex., seeking data for the completion of a geologic map of Texas. He has also visited Houston, Dallas, Fort Worth, Austin, San Antonio, Beeville and Cuero in securing final information for correcting the map of Texas which was undertaken several years ago by the U. S. Geological Survey.

NEW AND IMPROVED EQUIPMENT

Men Well Known in the Equipment Field

Earl M. Converse, vice president of the Dearborn Chemical Co., Chicago, was born in Williams County, Ohio, in 1885, spent the first 15 years of his life there,

EARL M. CONVERSE

and in 1900 went to Chicago. He attended night school and at the same time worked in the Dearborn company's laboratories. Later he took up chemical engineering in Armour Institute, graduating with honors. He continued his studies at Northwestern University.

Mr. Converse then installed and operated in Dearborn's plant an operating laboratory for the inspection of materials. Following this he entered the sales force of the company, continuing in this work 10 years. He developed several commodities, the principal one being No-ox-id rust preventive compounds. He was made manager of the specialty department for the purpose of marketing and servicing this and other special materials manufactured by Dearborn when the specialty and stationary departments were combined. Mr. Converse was made manager, creating what now is known as the industrial department.

Mr. Converse is widely known in the oil and gas industry, largely as a result of his research in rust prevention. He was made vice president of the company last January.

MOTOR SMALL BUT POWERFUL

A 100 horsepower motor less than 12 inches in diameter has been perfected by the Louis Allis Co., Milwaukee, Wis. This motor is designed for direct-mounted grinding wheels, saws, cutterheads, etc., where the diameter and peripheral speed of the cutting tool must be held to a minimum.

The Kerotest Manufacturing Co., Pittsburgh, Pa., is sending to those who ask for it a bulletin on Kerotest cast-steel balanced throttle valves for continuous control of drilling engines.

Tractor-Mounted Welder Usable in Remote Places

General Electric arc welding apparatus mounted on tractors constructed by the Cleveland Tractor Co. is now available for use in remote places where heretofore it has been difficult to supply current to the desired point of welding. Prior to the development of the tractor-mounted welder, there was not available a self-propelled, mobile welding unit. The nearest approach to this sort of equipment was a trailer-mounted, gas engine-driven, steel-wheeled trailer unit which required an additional source of power for movement.

The weight of the arc welder does not materially affect the stability of the tractor, the load being carried directly on the heavy chrome-nickel steel shaft which rests in the track frame of the machine. The mounting does not interfere with the drawbar and leaves the tractor free for any drawbar work. The equipment is particularly suitable for oil, gas and water line construction and repair work, for repair work in construction camps in out-of-the-way places, for structural steel erections, and for maintenance of way work.

This General Electric arc welding equipment affords the same features obtainable in other types of welding apparatus manufactured by the company.

The unit is simple in construction and has few wearing parts.

Instantaneous voltage recovery is accomplished by a transformer reactor, the secondary of which is electrically in series with the main generator field and acts as a voltage booster when a decrease in welding current, caused by breaking the arc, occurs.

The apparatus is designed for outdoor service and is compact due to the elimination of the exciter.

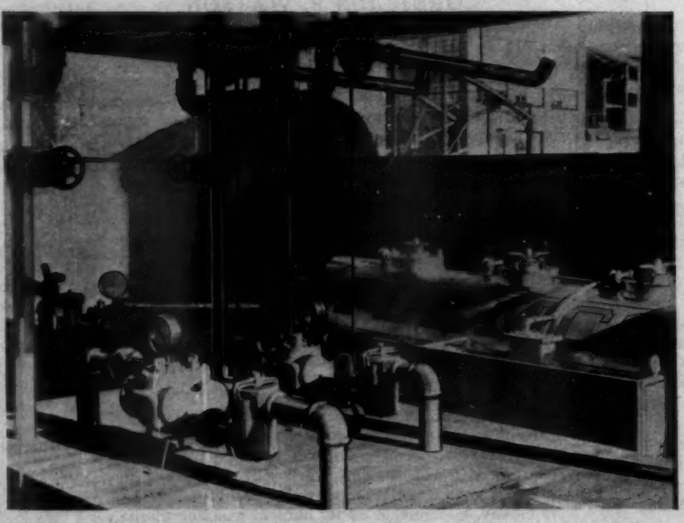
Other features include duplex voltage control, a dead front control panel, center scale meters, and a stable flexible arc and perfect commutation at all loads.

Handicaps of Welding Are Minimized by New Machine

The Universal Power Corp., Cleveland, Ohio, has given outdoor welding another tool in the all-weather crawler tractor mounted arc welder. The welder, driven by the tractor engine, utilizes the shunt inductor principle of arc stabilization regularly built into all the company's portable road trailer V-8 engined welders and motor-generator welders. This equipment consists of a standard Universal welder combined with the Cletrac crawler tractor to provide a mobile weld tool of marked overall economy. The generator is constantly and easily moved closer to its job by the crawler tractor. The handicaps of a rough and rugged country are diminished and welding goes everywhere.

The welder mounting does not interfere with use of the tractor for drawbar work. The whole welder assembly may be demounted by removal of a few bolts. This welding unit has been developed by the combined efforts of Universal Power Corp. and Cleveland Tractor Co. engineers.

Brodie Improved Loading-Rack Meter Is Read Easily



New type Brodie high-visibility loading-rack meters having 360° swivel dials

A new and improved type loading-rack meter has recently been announced by the Ralph N. Brodie Co., 659 Sixty-first Street, Oakland, Calif. A modern installation with three of these meters is shown in the illustration. The vertical dial counters are mounted on a swivel and can be easily turned to face any direction. The swivel rotates through a full 360 degrees. Increased visibility of the dial figures and counter hands is pointed as an outstanding improvement, since meter readings can be made at greater distances.

"This new development in high-speed, high-accuracy tank-truck loading meets a demand of oil companies which were using our tank-truck meters and desired adaptations for loading-rack service," says Walter Brown, engineer of the Brodie organization. "These new meters incorporate all of the recognized valuable stock and time saving characteristics of other Brodie meters. Like the latter, they operate rapidly on gravity or pressure flow. The dial extension column can be furnished in practically any desired length."

One-Man Pipe Machine Is Put on Market by Borden

The Beaver power adapter, announced by the Borden Co., Warren, Ohio, is described as a practical one-man pipe machine, light in weight, simple and port-

able. The operating speed of the die head, under load, is from 10 to 15 r.p.m., depending upon the size of drill used, line voltage, condition of dies, etc.

The device will cut right or left hand threads, and is reversible for backing off. A driving spud to fit all standard drill chucks is furnished.

The power adapter may be used as an electric-driven die stock, covering the full range up to 2-inch; or, with the base, it becomes a one-man pipe machine. The feet of the base are cored out to take legs of standard 1-inch pipe—to form a substantial work bench. The whole outfit, according to the manufacturers, can be taken apart in 30 seconds and transported from job to job in the smallest automobile.

The weight of the unit is approximately 27 pounds—of the base, 14 pounds—owing to use of high grade aluminum alloys.

Corrugated Steel Sheets for Tank Decks Offered

The innovation of a corrugated deck for bolted steel tanks, perfected by the Parkersburg Rig & Reel Co., Parkersburg, W. Va., is said by the manufacturer to incorporate every feature necessary for an ideal deck.

Owing to the shape, number, and location of deep radial corrugations pressed into the steel sheets several advantages are obtained, including increased strength, perfect fitting of seams, and ease and simplicity of erection as a result of elimination of rafters, flanges and channels. This corrugated construction makes the deck self-supporting, of equal strength over its entire area, and able to withstand increased pressure or vacuum without permanent deflection at any point. The possibility of bulging or pulling in is reduced to the minimum.

Channels, pressed into the radial seams, make perfectly matched joints possible, resulting in a tighter tank. These channels also prevent bolt heads from turning when nuts are tightened or loosened. An offset is pressed into the inner end of each sheet to provide a flat seat for bolting in the dome and to compensate for the thickness of metal and gasket. The periphery is formed so that each sheet lies flat on the flange of the staves. This reduces the amount of caulking and eliminates fitting in the field, which saves on erection time and costs.

No rafters are required to erect this corrugated deck. Thus the absence of inside projections reduces the number of surfaces in contact with corrosive gases, which lessens danger of collapse from corrosion and increases the safety of the deck.

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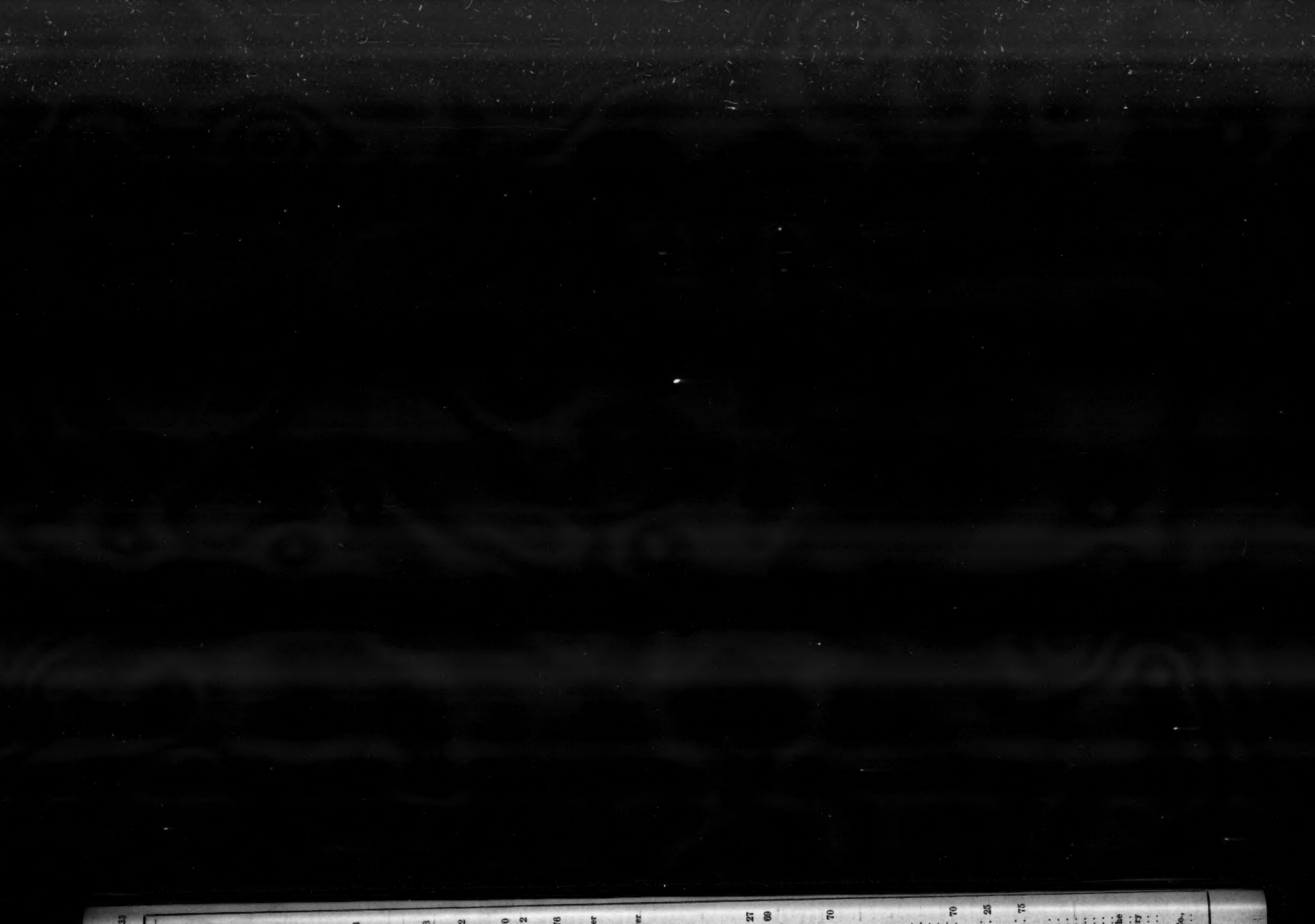
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